

MARINE REVIEW.

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No. 26.

The Lake Freight Situation.

Although there has been no advance in coal or ore rates there has been a change for the better in the condition of the freight market during the past week. Fair sales of pig iron have been made and there is a better tone to the market. The movement of ore has increased materially and enough business is now offered for all the boats and nearly all the coarse freighters are moving. The boats that have not started out can be counted with very little trouble. Ore cargoes are quite plentiful at ports at the head of Lake Superior at 50 cents and the same rate is being paid from Marquette but shippers from that port are not taking much wild tonnage. The Escanaba rate holds steady at 40 cents and cargoes are offered more freely than at any time since the opening of the season. Quite a little ore is being shipped from Marquette and Escanaba to Tonawanda at an advance of 10 cents over the rates to Lake Erie ports. There is nothing in the outlook at present that indicates an early advance in rates. Owners are hopeful and look for better carrying charges after the middle of July.

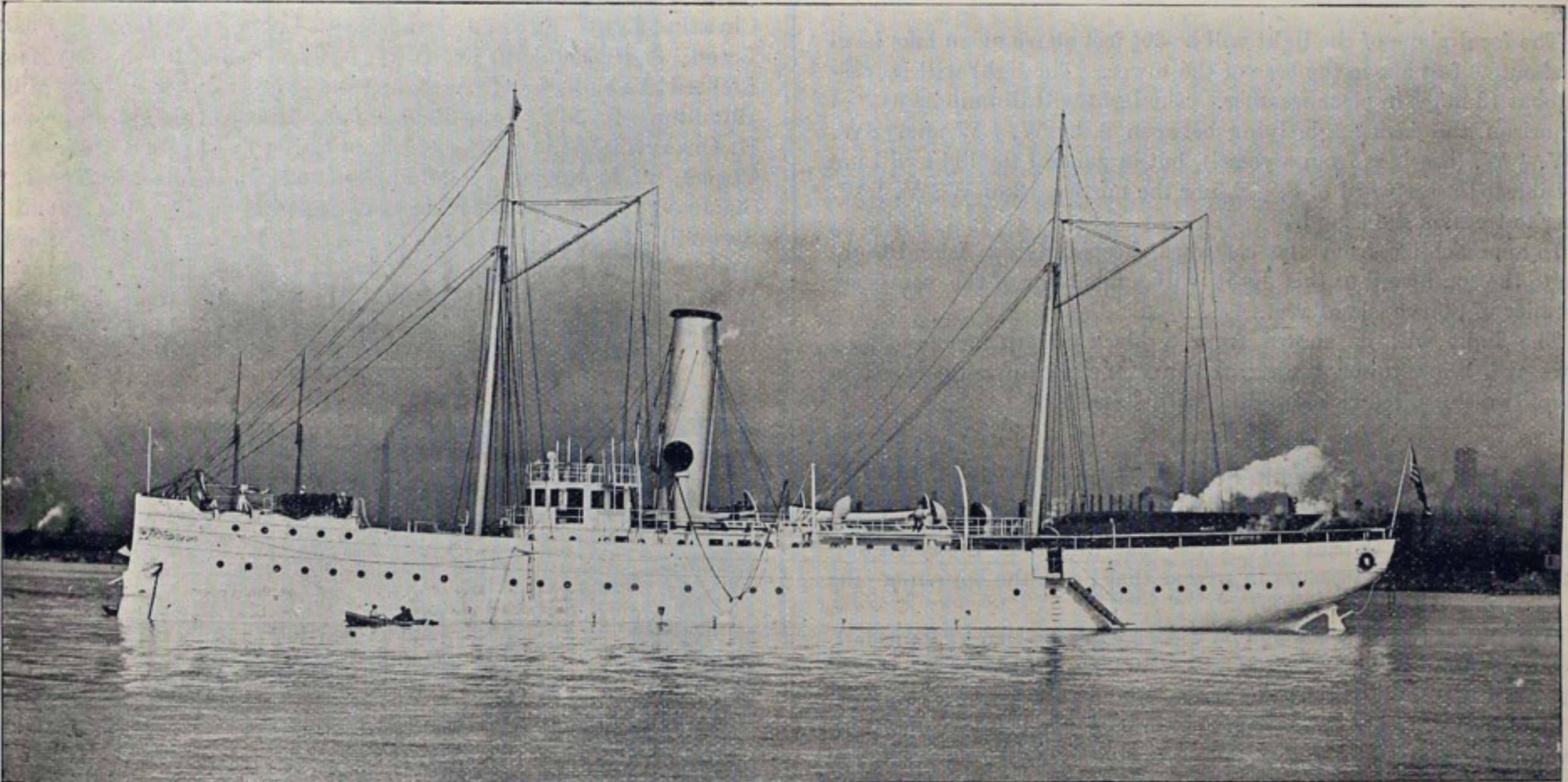
prominent Minneapolis elevator man says there is 25 per cent. more wheat acreage than there was in 1892 and that the prospects for a large yield are the best.

Around the Lakes.

The U. S. S. Yantic which will probably become the property of the Detroit naval reserve completed a voyage of 5,700 miles from Montevideo in 38 days. She is a wooden barque-rigged steamer 180 feet long and 30 feet beam, having a draught of 12 feet and 900 tons displacement.

Announcement of a double daily service between Detroit and Cleveland and four sailings per week between Toledo, Detroit, Alpena and Mackinac is made for the D. & C. line by General Passenger Agent Schantz sending out a card with a good illustration of a full hand—a hand full of water on which floats the D. & C. fleet of five steamers. The title is, "The entire fleet on hand."

The official presentation to Detroit, Mich., of a large silk national



Speed 21 miles per hour.

REVENUE CUTTER GRESHAM.

Built by the Globe Iron Works Co.

Grain freights at Chicago have showed a little improvement but the movement is still very light and will have to pick up before any great change is felt. Receipts of corn there are quite heavy.

The coal freight market is in better shape than it has been at any time since the opening. Shipments from Buffalo have increased and not nearly so many boats are coming from that port to Ohio for loads. Cargoes are more plentiful and shippers are having a little trouble getting Lake Michigan boats. Chartering for ports at the head of Lake Superior has been quite active during the past few days. For desirable cargoes, tonnage is being placed for all the leading ports at 20 cents.

The general condition also grows more hopeful. It is claimed that new Mesabi properties will be opened by Rockefeller. This may be done to compel fee owners to reduce royalties. With other reports of sales and the capability to mine more ore than last year, it would all seem to indicate a good movement. The report that J. J. Hill has contracted with the Robbins' interest for 300,000 tons of coal to be shipped from Fairport, is said to have no foundation, but other things indicate an improvement in coal shipments. A

flag and a union jack by the crew of the U. S. steamship Detroit took place June 14. A few months ago, when the cruiser, in Chinese waters, received orders for home, the sailors of the vessel made expressly for the trip, at their own expense, a homeward bound pennant three hundred and fifty feet long, together with an ensign and a union jack. These were displayed in the various ports where the ship touched on her voyage from Japan to New York. The flags were delivered in Detroit by Israel Charland, a seaman of the crew, who resides there.

A new epidemic has broken out among your Uncle Samuel's ships, says the Montreal Star. It is not the blind staggers this time, nor tendency to run aground, but plain, every-day American dyspepsia. The revenue cutter Chandler is the first victim. This gallant vessel was backing out from the Barge Office in New York, when it in advertently lunched off a doughnut which it found floating in the harbor, and was presently on the sick list. It absorbed the dyspeptic compound through an open valve, whence it passed into the condenser and promptly necessitated a rest and medical treatment and a visit to the repair shop.

Sailing by Handspikes and Shots.

Coast navigators have always looked down upon their brethren on the lakes, intimating that lake mariners were not familiar with the sun, moon and stars, and sailed by guess. The following account of the wreck of the Jennie P. Phillips of Swampscott, on Harding's ledge lets the wind out of their high and mighty claims:

"John A. Rogers, who was in lookout, said that the whole thing was a mistake, as they knew better. He said the weather was a little hazy, but they could just barely see the lights. He stated distinctly that the trouble was caused by the fact that Boyd got Bug light a handspike length to the southward of Long Island light, when he should have gotten it a handspike length to the northward. He did not discover the ledge until the vessel was within 300 or 400 'shot' of it, or practically right on top of the ledge."

Lake captains may not be very heavy on azimuth tables and sextants, but they are not farmers or rabbit hunters that sail their craft by "handspikes" and "shots."

Notice to Mariners.

On or about July 10, 1897, a fixed red light of the fourth order will be established in the structure recently erected on the southwesterly point of South Bass Island, westerly part of Lake Erie.

Bearings and distances of prominent objects are:—Starve island reef buoy, SE. $\frac{3}{4}$ E., $1\frac{1}{4}$ miles; West sister island light house, NW. by W. $\frac{1}{2}$ W. 16 miles; Green island light-house, NW. $\frac{3}{4}$ W., $1\frac{1}{4}$ miles.

The focal plane of the light will be $60\frac{1}{2}$ feet above mean lake level and about 40 feet above the base of the tower. The light will be visible about 13 miles in clear weather. The light will illuminate 315° of the horizon, the dark angle lying between S. by W. $\frac{1}{8}$ W. and SW. by W. $\frac{1}{8}$ W. (bearings from a vessel), but in general the light will not be visible to the eastward of S. $\frac{3}{4}$ E. nor the northward of WSW. $\frac{1}{8}$ W. owing to trees on the island.

In approaching from the eastward, keeping Green Island Light open to the southward of this light will guide clear of the southerly extremity of Starve island reef.

The light will be shown from a black lantern surmounting a square red brick tower projecting from the southwest corner of a square, two-story, red rick dwelling with slated roof.

A Wreck Full of Rum.

John Quinn, the Detroit diver, tells a story of the wreck of the brig Neptune to the Detroit Free Press that illustrates the usual outcome of searching for treasure in wrecks that lie at the bottom of the lakes.

About twenty-five years ago he was engaged by George Ramsdell, a liquor dealer to go down to the wreck of the little brig Neptune, sunk off Little Point au Sable, Lake Michigan. The Neptune was one of a fleet of small ones—average tonnage about 150—which ran between Erie and Chicago, carrying miscellaneous freight. She was bound down in November, 1820, when she ran into a heavy gale off that point, and foundered close to the shore. Ramsdell had heard she was loaded with rum, a barrel of which floated ashore. He said he thought that rum 60 years old would be worth its weight in gold.

Quinn fitted up an expedition and went to the wreck. He found it in time, in nine feet of water, with all of the hull submerged in the washed up sand except three feet of her rail. He had orders to go ahead and dig through the sand, when he received word that he had been given a contract to sink cribs for the government in Fairport, Lake Erie. So he quit the rum-hunting and took the other job.

As coincidence would have it, at Erie he fell in with an old and odd character, named Webster by his parents, nicknamed "Peg-Leg," by his associates. To him Quinn related the Neptune incident.

"Why, darn it all, I was mate on that brig," was "Peg-Leg's" first exclamation. "I'll tell you all about her. She had just three barrels of rum in her cargo. She went down nose first, and another man and myself were the only ones saved. We both were washed ashore. There we lay for some hours before help came. Our legs and feet were frozen, and our arms getting that way, though we kept circulation up by moving them about."

"My mate, a fellow named Steve, was the first to notice this condition, and then I found I was in the same way. Near us lay the

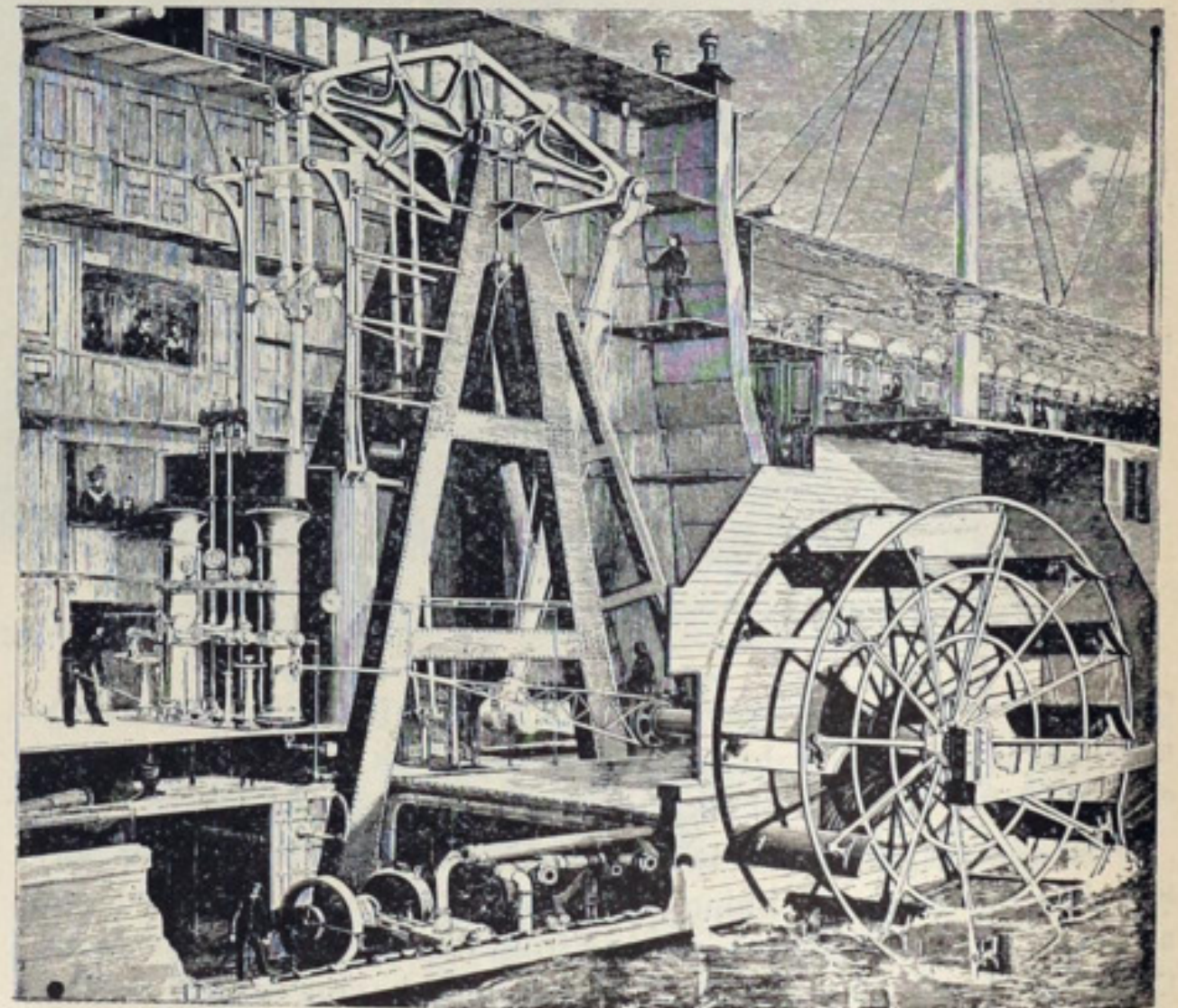
three barrels of rum. Steve was struck with an idea, and he dragged himself to one of them. At his demand I helped him right it; one of the others was already right side up. Then whipping out his jackknife he cut out the head in sections, and before I knew what he was up to he had pulled himself to the top and let his body down, feet first into it. The rum was of the temperature of ice water, and of course it had a beneficial effect on his legs.

"He wanted me to do the same, but I could not see it that way, and when I had made an opening in the barrel I got the rum into me, instead of getting into the rum."

"The upshot was that Steve regained the full and free use of his legs, while mine, after a long siege, in which amputation was several times threatened, were finally healed up, though they were in the dwarfed and twisted condition in which you see them to-day."

Unclaimed Letters.

Unclaimed letters are held at the marine postoffice, Detroit, Mich., for the following persons: Charles Baker; Mrs. Anna Buoyteen; H. S. Brakeman; Archie Burnett; Sam Brown—2; Michael Breathous; M. J. Burns; Richard Beebe; Louis Champaine; Richard Cornish; Chas. A. Conklin,—2; Amandus Christie; Frank Chanel; Miss Elzora Clingman; Frank Dettmer; John Doran; W. J. Downing; Henry C. Dubay; J. H. Driscoll; R. E. Ferguson; Willet Foster; Frank Golson; John Gaines; James Guyammee; F. H. Howard; Alexander Hay; Bert Hambly; Fred Holden; Frank Housback; Mrs. Sarah Jackson; Grant Johnson; Joe Kaine; George Kaiser; Mrs. Christine Kraft; Edwin J. Law; Capt. Lockrig; P. Larsen; Charles Lozon; J. H. Madden; Frank W. Miller; John Miller; Bert Moore; Richard McNamara; George McCue; William Moore; I. Miller; Hamilton Murphy; John Musseinan; Joseph Noel; John Nelson; H. Onsworth; Annie O'Leary; Thos. O'Neill,—2; M. Porten; Albert Rogers; A. L. Roberts; Adolph Roberts; J. Rehbaum; Mrs. J. L. Stambaugh; Joseph Stevens; T. Smith; L. P. Smith; John F. Spowell; John Smith; George H. Shaw; L. B. Simpson; Wm. Sheldon; Andrew Thompson; Raymond Turk; E. T. Viles; F. P. Wilson; John D. Wallser; Miss Tracy Woodman; Henry Wolf; John Wellnamser; H. Wise; Frank Walschleger; Henry L. Workman; John Winterhalter.



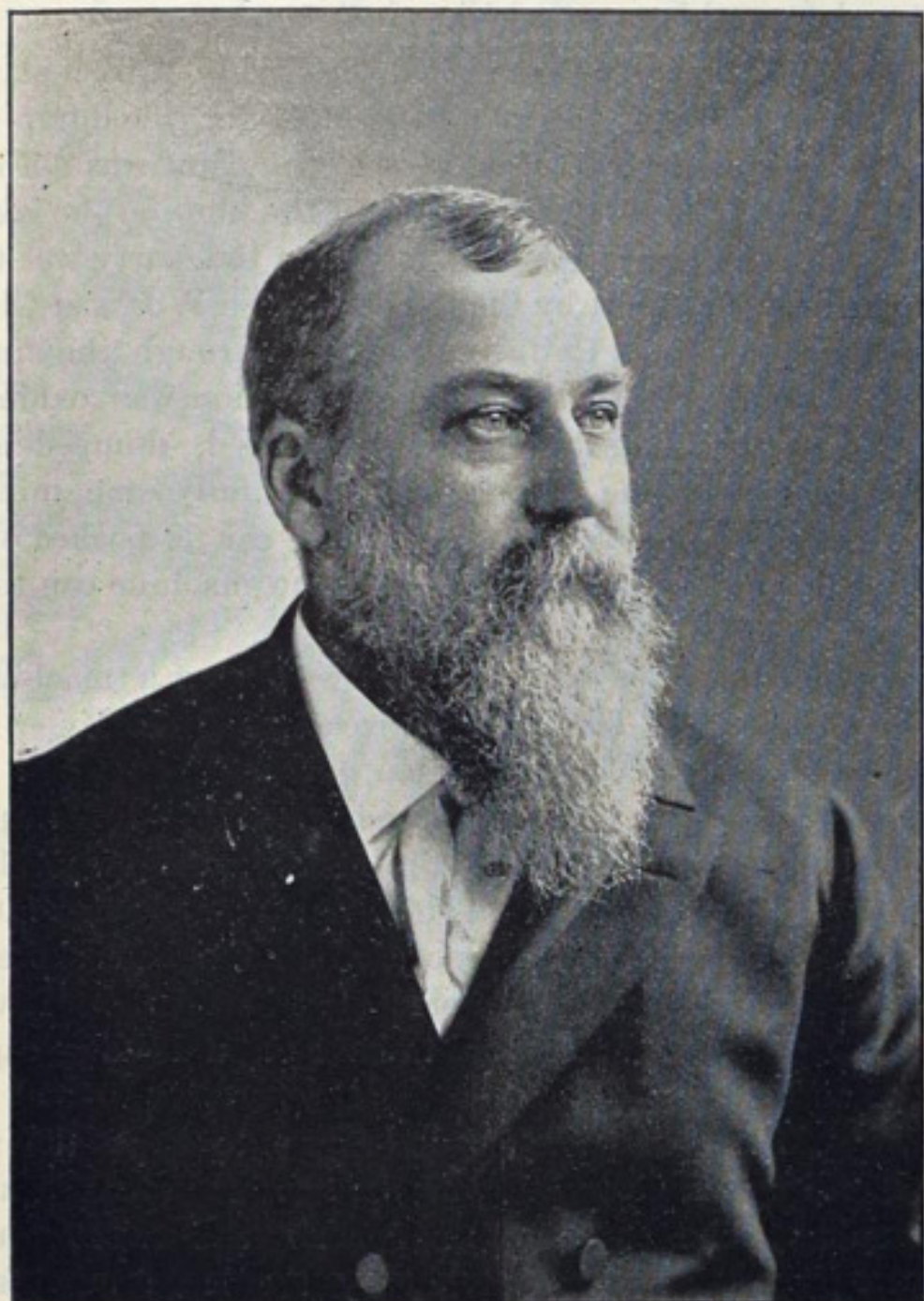
VIEW OF THE FLETCHER BEAM ENGINES IN THE HUDSON RIVER STEAMER ADIRONDACK.
From the Scientific American.

The large single-sheet chart of Georgian bay, just issued by the British admiralty, was prepared from the surveys on which Staff Commander J. G. Boulton, R. N., has been engaged for several years past. This chart may be had from the Marine Review for \$1.75. The price is higher than is usually charged for navigators' charts, but this one takes the place of probably ten sectional charts and is corrected up to date.

Chief Constructor of the U. S. Navy.

Chief Constructor Philip Hichborn of the U. S. navy was born at Charlestown, Mass., in 1839, of a stock that contributed to the sinews of colonial independence, Deborah Hichborn being the mother of Paul Revere. Later they developed into one of the foremost of those renowned ship building families of New England.

At twenty-one having been graduated from the Boston high school, and by direction of the Navy Department, having received supple-



mentary to his five years' tuition as shipwright's apprentice at the Boston navy yard, a course of special instruction in ship construction, calculation, and design, he sailed from Boston for California in 1860. That tempestuous voyage of 150 days gave him an insight into the needs of nautical life which has been of inestimable value to him ever since.

Nine years' service at the navy yard, Mare Island, carried him from an humble position in the construction department of that station to master shipwright at the age of twenty-three, in which capacity he was often called upon to assume the entire control of the department in the absence of the naval constructor.

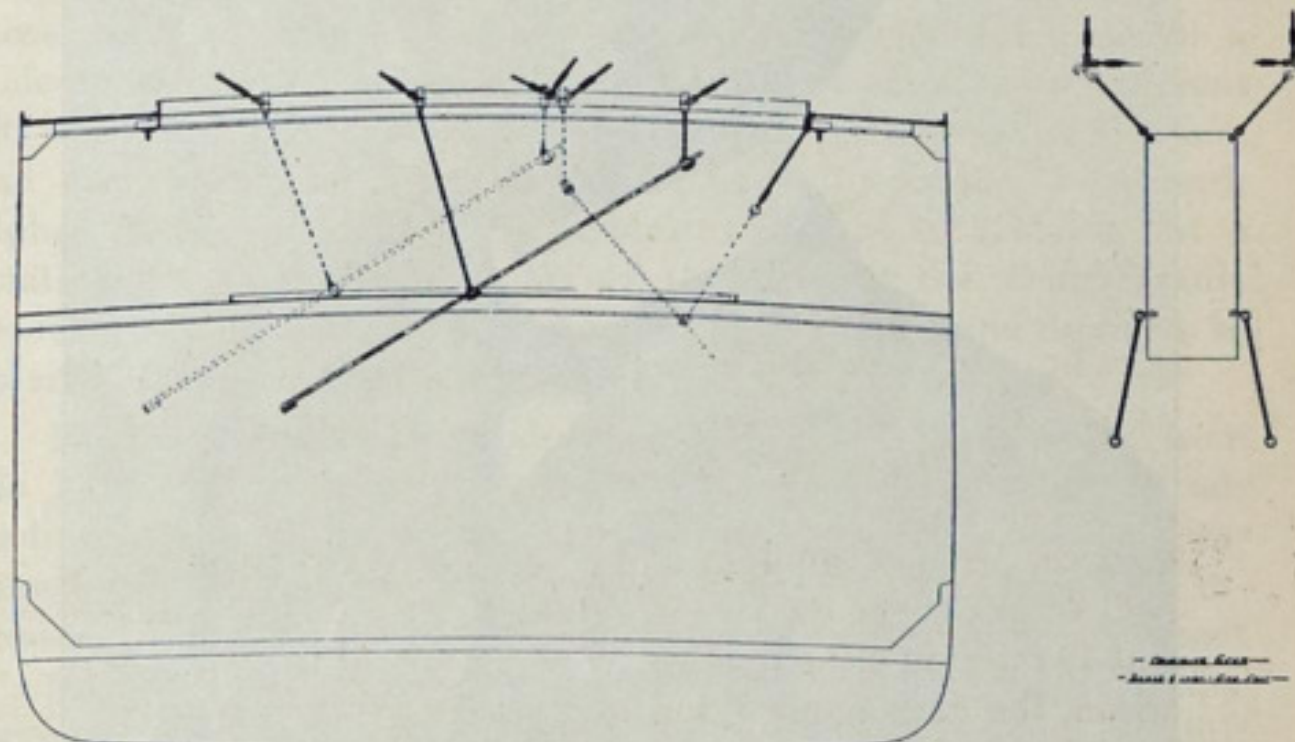
In 1869 he entered the navy as an assistant naval constructor, and six years later, after a severe examination, he became a full constructor. From that time his life has been one of uninterrupted activity in the immediate concerns of our naval vessels, broken once only by his tour of European dock-yards, of which his report gives but a restricted idea of the scope of his investigations there. This activity became more exacting when he became chief constructor on July 13, 1893.

The order of the department regarding the bureau's work raised him to a dignity comparable to that of the chief of naval construction in England; an added responsibility to which he responded without the slightest tax upon his resources. His present honor is the simple sequence of a life of unremittent energy, a mind rarely fitted to its calling, supplemented by a nature of unusual strength, and a temperament and heart at once kind and generous to friends and fair to those less graciously disposed.

A wondrous wise Detroit vessel owner commenting on the wasteful use of steam on tow barges, says that the engine of the steam towing machine ought to be aboard the steamer, on which steam must be kept up all the time. He forgot that it is often convenient to have these barges towed by another steamer. In commenting on the expense of steam towing machines and steerers he didn't consider that the expense of them is saved by keeping the vessels from yawing off their courses and grounding.

Allen's Ore Trimming Device.

The accompanying sketch represents Capt. C. C. Allen's ore trimming device, for which patent was allowed June 11, 1897. The invention consists of two deflection skids suspended from the hatchways of vessels, one called a section, properly constructed of two-inch oak plank four feet in width and length according to size of vessel, and one termed a bumper made of steel plate, both being fitted with chains and hooks for suspending at any desired inclination in the hold. The ore falling on these from the chutes will be distributed in the vessel as desired. The hooks are so formed that they may be adjusted to any desired position on the hatch comings and fastened by guys to keep from slipping when in use. The apparatus has been successfully used in the steel steamer *Castalia* as is shown by letters from two Cleveland dock superintendents given below. The steamer *Presley* and consort, steamers *Corsica*, *Coralia*, *Fayette Brown*, *Carnegie* and schooner



Hartnell are now using the device. The steamer *Castalia* has loaded and trimmed 2,700 gross tons iron ore in three hours with this apparatus, while the average time of trimming fifteen cargoes of ore during 1896 was four hours and 30 minutes.

Mack Andrews superintendent of the Pittsburgh docks, in a letter to Capt. Allen says "As to the advantage of the use of the trimming apparatus on the *Castalia*, I find that we can unload the *Castalia* with much less wear and tear on the cables, and the despatch given this vessel is about one hour less than formerly, owing to the fact that it does not require so much time to get bottom."

Supt. Riley of the N. Y. P. & O. dock writes to Capt. Allen as follows: "I find that your system of trimming the *Castalia*, as far as unloading is concerned, is much better than the old plan."

Practical Charity.

Editor *Marine Review*:—Your statements regarding the response of Mr. Carnegie and Mr. Rockefeller to the request for aid by the mayor of Virginia, Minn., were not wholly correct. It is true that Mr. Carnegie sent a check for a thousand dollars, and it was appreciated, although adverse comments were made. But to say that no response was made by Mr. Rockefeller was an error. The mayor's letter was acknowledged and Mr. Rockefeller's agent was sent to investigate. As a number of mines had been opened shortly after the appeal had been made and other employment had been found for the idle men, the distress had been greatly relieved. As a result of the investigation, however, one of the Rockefeller mines was opened and as many men as could be used were given employment. That the largest number possible be employed the ore was loaded into the cars by hand instead of using the steam shovel as had been the custom. By this means a great many thousand dollars were given as wages. This response required more thought and sympathy than the giving of a check outright.

Believing that you would not want to criticize any one unjustly, I give you a truthful statement of it.

A Citizen.

Virginia, Minn., June 17, 1897.

The *Marine Review* has prepared in neat oak frames cards containing the schedule of time required to be run between certain points in the St. Mary's river under the speed limit of seven miles an hour. When hung in a pilot house, distance and time may be readily noted from these cards, as the type is large. They will be sent by express to any address at \$1 each, or may be had upon application at 409 Perry-Payne building, Cleveland, for 65 cents each.

Herbert Mitchell.

There are few young men on the lakes who had brighter prospects than Herbert Mitchell, oldest son of John Mitchell, well-known throughout the lakes. He graduated from Yale not long since and



was recently taken into the firm of Mitchell & Co. He was suddenly killed by an electric car just after alighting from another, last Friday. It was a sad blow to the father, who was very ambitious for the young man's future. He was 21 years of age.

Lake Erie Docks Inspected by Mining Engineers.

The summer meeting of the Ohio Institute of Mining Engineers, June 15-18, was conducted this year on the plan of an old Greek school of the peripatetic order. In other words it was instruction "on the go" from the morning of the first, to the evening of the last of the four days, and in the course of the journey Lake Erie docks were thoroughly inspected. The party is under obligations to Secretary R. M. Haseltine and President F. A. Ray, for the valuable information gained. At the docks of the Short Line R. R. on Sandusky Bay the party, consisting of 134 persons, examined the old methods of loading vessels with buckets and cranes, and inspected the interior arrangements of a whaleback vessel. They also saw the Thornburgh rapid loader, now building by Webster, Cramp & Lane of Akron, O.

The excursionists then visited the Rosenbaum elevator and examined the complete appliances, where through the use of an endless belt some 7,000 bushels of wheat are moved per hour. The wheat is carried on the flat belt at a very rapid rate without spilling, and when the turn of the belt is reached, it leaves the belt and pours into the funnel without the loss of a single grain.

Wednesday morning the excursionists again boarded the Maud Preston for Huron. Just outside the bay near Cedar Point a curious phenomenon is to be seen. Uncle Sam in building a breakwater there last year managed to arouse the ire of Lake Erie so that within a few months she has washed away some forty feet of valuable land of the peninsula and the result is a big suit for damages against the government. Experts are unable to explain the action of the lake at Cedar Point if the breakwater is not the cause of it.

At Huron the party witnessed the McMyler machine used for handling the mountains of iron ore piled up along the docks. The speed with which this work is carried on is surprising. The buckets being placed near the bottom of an ore-pile are filled with very little shoveling. The ladies of the party were somewhat concerned about the fate of the numerous swallows who burrow their holes in the ore-pile near the top and are destined to be turned out of house and home as the piles rapidly diminish and fall under the action of the loader.

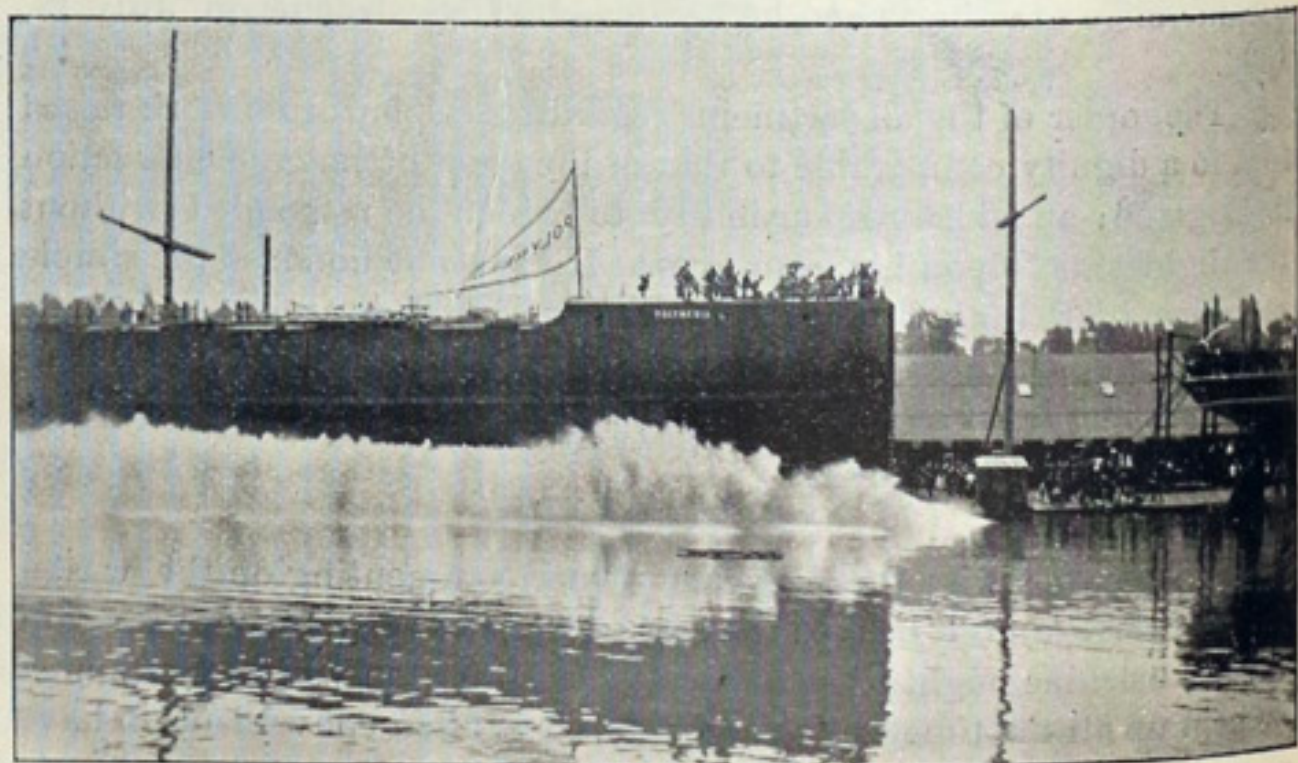
At Huron the excursionists also examined the Brown machine for loading coal, which is said to have a guarantee of 3,000 tons per day. Some of the party timed the machine while it loaded thirty tons in seven minutes and eighteen seconds. But forty seconds elapsed from the time the railroad car was taken until the coal was dumped into the six buckets ready for loading. These buckets do not look very large a short distance away, but each holds five tons. The apparent ease and rapidity with which these immense masses of heavy material are moved and transferred excited great wonder. Not a moment seemed to be lost and everything moved like clock-work.

At Cleveland the party first visited the Cuddy-Mullen plant on the outside of the harbor. At this plant the McMyler side dump is used, but owing to the non-arrival of a vessel, the plant was not in operation, but it is said to be the fastest plant of the kind on the lakes, loading 5,000 tons in ten hours and a half. Then the party was taken to the Long car unloader built by the Excelsior Iron Works of Cleveland, and located on the Erie Railway tracks. Through the kindness of President George W. Short, the mode of operation was exhibited. It is stated that by the Long dump a car is clamped, dumped and back on the track in twenty-one seconds, and that only one minute and thirty-five seconds elapses from the time a car is pushed on to the machine until another takes its place. The machine can turn forty cars an hour.

Passing up the river the party were shown a machine being erected on the Valley Terminal Railroad of the McMyler pattern, similar to the one on the Cuddy-Mullen docks.

At Ashtabula harbor the party first examined the Brown coal loading machine which was engaged in loading one of the Bessemer 4,000-ton boats. It is said that this machine has unloaded 118 cars in twelve hours. The party then proceeded to the lake shore and examined the first car unloader ever erected at lake ports. It works on the cantilever principle and is said to have an unloading capacity of sixteen cars an hour.

As some of the Pennsylvania guests were to leave the party at Cleveland, an impromptu meeting of the two institutes was held during the evening in the parlors of the American House at which resolutions were passed thanking individually the large number of persons and corporations that had so generously contributed to the entertainment and instruction of the members and their guests. The Pennsylvania guests were especially hearty in their praise of the excellent management which had characterized the entire trip. There was a general discussion of the points of advantages and disadvantages in the various machines and methods which had been inspected on the journey and views were freely exchanged as to the condition of the mining industry in Ohio and Pennsylvania, and as to the opening up of new markets for the products of those states. The following gentlemen took part in the discussion: President Ray, Secretary Haseltine and Professor Lord of Ohio; Inspector T. G. Evans and Messrs. James Blick, W. D. Wilson, Wm. Clifford, B. Callaghan, W. E. Fohl, Fred Keighley and others of the Pennsylvania society. Secretary Haseltine, who conducted the party is also chief inspector of mines in Ohio.

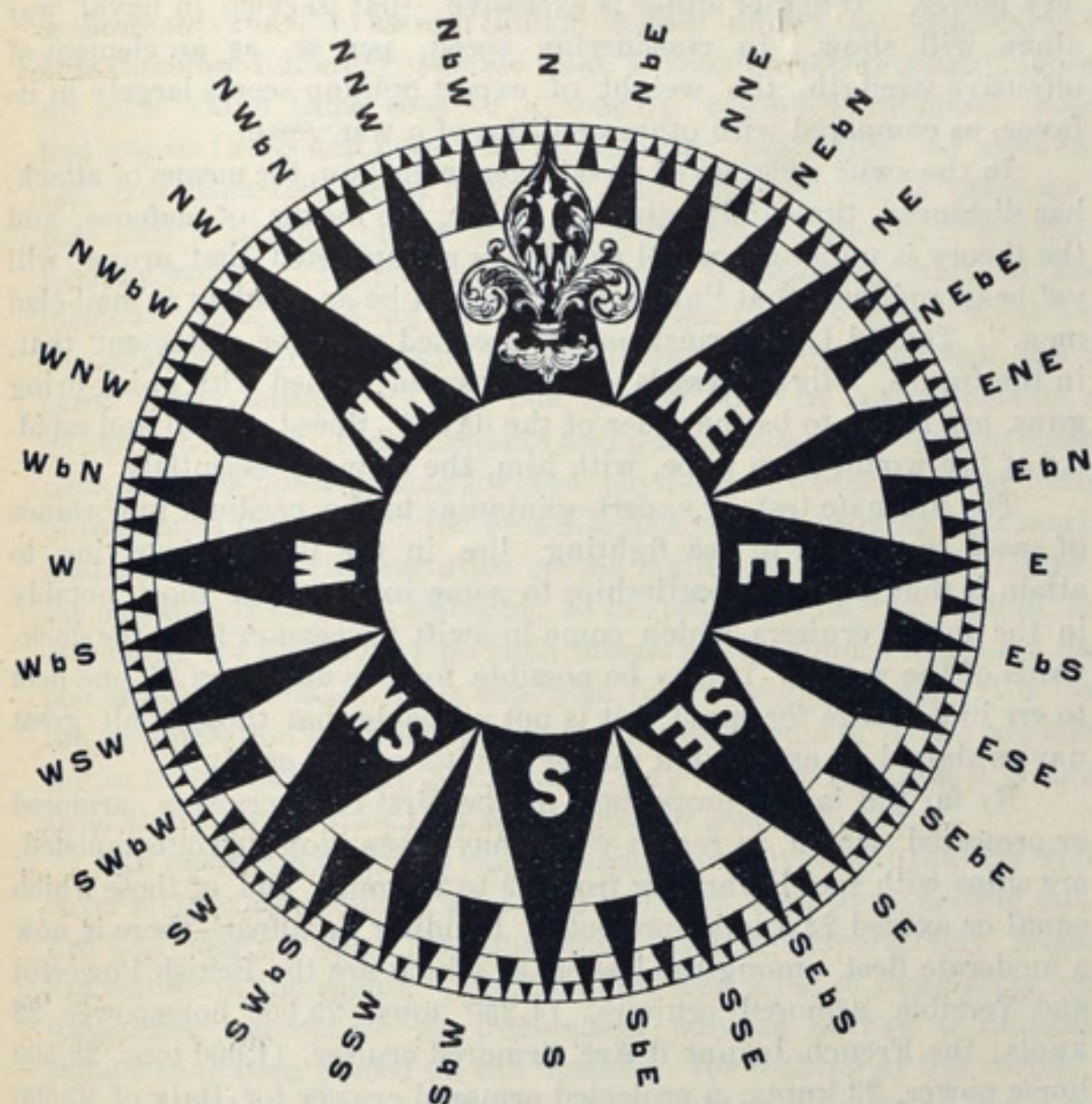


LAUNCHING OF THE CORRIGAN SCHOONER POLYNESIA AT THE GLOBE YARD, CLEVELAND.

Photo by W. H. Mack.

Boxing the Compass.

Young men joining the naval reserve, and those on lake boats who want to be wheelmen sometimes have difficulty in learning to box the compass. Herewith is a diagram showing the thirty-two points. Beginning at the north and going to the right the eight full points are north, northeast, east, southeast, south, southwest, west



and northwest. The half points, half way between the full points take the compound names. For instance the two half points between north and east would be northeast, the one between north and northeast having north prefixed and the one between northeast and east having east prefixed. They would thus be north northeast and east northeast. The others would be east southeast and south southeast, south southwest and west southwest, west northwest and north northwest. The quarter points are the most difficult. The quarter points on either side of the full points take the name of the full point, with the designation of the next cardinal point. For instance the quarter point to the left of north takes the name of north by west, the one to the right, north by east. The one to the north of northeast is northeast by north, the one to the south, northeast by east. The one to the north of east is east by north and the one to the south, east by south, etc.

Future of the Lake Grain Trade.

In a lengthy article entitled "Diversion of the flour and grain traffic from the Great Lakes to the Railroads" in the June number of Political Economy, George G. Tunell presents a great many statistics on the lake grain trade, showing its divergence to the railroads. The volume of statistics and the extent of the argument prevented reproduction as a whole, but enough of the latter is used to show the general trend of the article. Students of transportation who want the entire article can address the University of Chicago Press. Extracts of the article follow:

As the surplus corn-producing region now lies to the southwest of the head of Lake Michigan rather than directly to the west of it, there has been a very decided tendency to ship corn for export by the all-rail lines to the South Atlantic ports, notably Baltimore, Philadelphia, Newport News and Norfolk. Shipments by the all-rail routes to these ports will probably increase. The distances from the corn-growing districts to the South Atlantic ports are less than to the North Atlantic ports. There is another reason, and a much weightier one, for the movement to the southern ports from Chicago. Philadelphia has a differential rate in its favor of two cents and the other ports one of three cents per 100 pounds, as compared with New York. When these differentials were agreed upon in 1882 they were given the southern ports to offset the advantage New York possessed in the matter of ocean rates. Since 1882, however, the situation has radically

changed. New York has, in good part, lost the advantage she then possessed in the item of ocean rates, and thus the reason for the existence of these differentials has disappeared. The differentials, however, not only remain but have become much more effective than when adopted. Nominally the differentials remain as they were fixed in 1882, but really they are much higher than they were then. This is true because the rates have fallen very decidedly while the differentials have remained absolutely stationary. Had the differentials been fixed upon a sliding scale, falling as the rates fell, the southern ports would not have the advantage which they now possess. What might have been easily arranged in 1882 can now be brought about only by a serious struggle, and one which the northern trunk lines are not likely to make. The grain traffic is an important item to the southern roads, and they will wage a desperate struggle to retain it. This is fully recognized by the more prosperous northern roads which have a more profitable miscellaneous business. We have here a case of a wide difference in marginal utility of a certain traffic to two different sets of roads. The Baltimore and Ohio, the Chesapeake and Ohio, and the Norfolk and Western—roads hungry for traffic—set a much higher value upon the traffic in corn, which at best yields but a small profit, than do the New York Central and the Pennsylvania roads, whose terminal yards are already crowded, and can only be enlarged at a great outlay of money.

Not only have the east-and-west trunk lines diverted traffic from the lakes, but so have also the Mississippi river and the railroads leading to the gulf. This southern movement, however, never assumed large proportions until the year 1896; and for this year the increased traffic was largely accounted for by the increased movement of corn. Our total exports of corn last year having been unusually large, it may be supposed that the sudden prominence of the gulf ports in the shipment of grain is ephemeral. But such a view is hardly justifiable. If the Mississippi river were the only competing route to the gulf ports the southern route would perhaps not greatly encroach on the traffic now moving over the lakes and the east-and-west trunk lines. But the Mississippi is no longer the only line seriously competing with the great east-and-west routes to the Atlantic ports. The railroads leading to the gulf are in certain sections competing with the great east and west routes. As regards the railroads east of the Mississippi river, this is especially true of the Illinois Central, which has recently completed very excellent terminal facilities at New Orleans for handling grain. The small export movement of grain via New Orleans in past years has been largely due to the inadequate terminal facilities at that point. Although there may be an increased grain traffic over the Illinois Central, this enlarged business will not be at the expense of the lake route. Grain grown in the territory but a short distance south of Chicago and east of the Mississippi river does not go east over the lake route, for this is effectually prevented by the high local rates for the short haul to the lake ports. It need hardly be said that if the lakes cannot monopolize the flour and grain traffic from points situated immediately upon the lakes, such as Chicago and Milwaukee, they cannot successfully compete for the shipment of these commodities from points south of Chicago. The senate select committee appointed in 1872 "to investigate and report upon the subject of transportation between the interior and the seaboard" took the position that "the railroad interests practically control the transport of grain from all that part of the states of Illinois and Indiana situated south of a latitudinal line sixty miles south of Lake Michigan." The railroad interests here referred to did not include the railroads running to the gulf but merely the lines running to the seaboard. The grain produced in the region some little distance south of Chicago has been and in all probability will continue to be carried to the Atlantic ports. The railroads leading to the gulf have no advantage over some of those running to the Atlantic in point of distance; and as ocean freight rates to European ports are materially higher than those from Atlantic ports, and as the gulf railroads obtain but little return freight, it is difficult to see how these lines are going to draw traffic in the territory east of the Mississippi river and north of St. Louis from the northern trunk lines, and it is still much more difficult to understand how the south-bound lines will encroach upon the traffic which has gone over the lakes. The south-bound lines have easy grades and are not troubled with snow and ice, but these advantages are not sufficient to offset the disadvantages under which they operate.

[CONTINUED.]



DEVOTED TO LAKE MARINE AND KINDRED INTERESTS.

Published every Thursday at No. 409 Perry-Payne building, Cleveland, Ohio,
by John M. Mulrooney and F. M. Barton.

SUBSCRIPTION—\$2.00 per year in advance. Single copies 10 cents each. Convenient
binders sent, post paid, \$1.00. Advertising rates on application.

Entered at Cleveland Post Office as Second class Mail Matter.

The books of the United States treasury department on June 30, 1896, contained the names of 3,333 vessels, of 1,324,067.58 gross tons register in the lake trade. The number of steam vessels of 1,000 gross tons, and over that amount, on the lakes on June 30, 1896, was 383 and their aggregate gross tonnage 711,034.28; the number of vessels of this class owned in all other parts of the country on the same date was 315 and their tonnage 685,204.55, so that more than half of the best steamships in all the United States are owned on the lakes. The classification of the entire lake fleet on June 30, 1896, was as follows:

	Number.	Gross Tonnage.
Steam vessels.....	1,792	924,630.51
Sailing vessels and barges.....	1,125	354,327.60
Canal boats.....	416	45,109.47
Total.....	3,333	1,324,067.58

The gross registered tonnage of the vessels built on the lakes during the past six years, according to the reports of the United States commissioner of navigation, is as follows:

Year ending June 30.	1891	1892	1893	1894	1895	1896	Total
	204	169	175	106	93	117	864
	111,856.45	45,968.98	99,271.24	41,984.61	36,352.70	108,782.38	444,216.36

ST. MARY'S FALLS AND SUEZ CANAL TRAFFIC. (From Official Reports of Canal Officers.)

	St. Mary's Falls Canals.			Suez Canal.		
	1896*	1895*	1894	1896	1895	1894
Number of vessel passages.....	18,615	17,956	14,491	3,409	3,434	3,352
Tonnage, net registered.....	17,219,418	16,806,781	13,110,366	8,560,284	8,448,383	8,039,175
Days of navigation.....	232	231	234	365	365	365

*1895 and 1896 figures include traffic of Canadian canal at Sault Ste. Marie.

One of the oldest shipbuilders now in the business expressed an opinion the other day that the advent of Rockefeller and Carnegie in the ore and vessel business would prove a blessing in a short time. "They are doing," he said, "what smaller concerns in the same lines could never do; preparing the way for a great export business. This will in turn benefit all classes. I have gone through two other periods of depression in the lake business. They were not caused by men with large monied interests building large fleets. If the Rockefeller fleet had not been built some one else would have built in the next two seasons what was built in one." And however it may effect the business it must be remembered that the present Bessemer fleet will carry only 60 per cent. of the Rockefeller ore, and for the other 40 per cent. he must go into the market for tonnage. He would have probably done this for all his ore had not he been compelled two years ago to pay a lake freight of \$2 per ton on ore that brought only a trifle more than that at Lake Erie ports. Under these circumstances it would seem that he had the right to construct ships to carry his own ore on the common highway open to all citizens of the United States, without any one feeling that his rights had been invaded.

The kind of arbitration that is thought to be most effective by Assistant Secretary of the Navy Roosevelt, is shot and shell arbitration, backed up by a powerful navy. He says that preparation for war is the surest guarantee for peace. Arbitration is an excellent thing, but ultimately those who wish to see this country at peace with foreign nations will be wise if they place reliance upon a first-class fleet of first-class battleships rather than on any arbitration treaty which the wit of man can devise. Nelson said that the British fleet was the best negotiator in Europe, and there was much truth in the saying. Moreover, while we are sincere and earnest in our advocacy of peace, we must not forget that an ignoble peace is worse than any war. A really great people, proud and high-spirited, would face all the disasters of war rather than purchase that base prosperity which is bought at the price of national honor.

There is a shortage of seamen in the navy, there being some 700 vacancies. For this reason the gunboats Helena, Annapolis and Nashville, although ready for service are kept out of commission. In view of this a naval recruiting station may be opened on the lakes. If this number of men were recruited at Chicago it was thought that in

the fall it might affect wages through causing a scarcity of lake seamen, but twice as many could be spared without causing a scarcity in this line.

The Importance of Speed in War Ships.

A ship-of-war is, in her design, but a combination of compromises. For one service, she may be given great speed; for another great battery power. Whether either is excessive, that service in naval war alone will show. In considering speed, per se, as an element of offensive strength, the weight of expert opinion seems largely in its favor, as compared with other qualities of a war vessel.

In the swift progress of naval science the gun, the means of attack, has distanced, time and again, the armor, the means of defense; and the theory is no longer novel or wholly unsupported that armor will yet be abandoned, that "armored ships will be as obsolete as mail-clad men." Indeed Lord Armstrong is credited with the statement that, in the future, "light vessels of great speed, armed with quick-firing guns, are likely to be the order of the day." Speed of hull and rapidity of fire would seem to be, with him, the primary essentials.

The ultimate test of expert opinion as to the cardinal importance of speed as a factor in sea fighting, lies in the incessant striving to attain it that is seen in battleships to some extent, but most notably in the many cruisers which come in swift succession from the dockyards of the world. It may be possible for the designers of one fleet to err in a "craze for speed;" it is not probable that those of all great navies should go astray in a matter so vital and so costly.

By far the larger proportion of the first-class cruisers, armored or protected, which, in recent years, have been projected or completed, are ships with speeds varying from 19 to 21 knots; and, of those which equal or exceed 22 knots—projected, building or afloat—there is now a moderate fleet, among the leaders of which are the British Powerful and Terrible, armored cruisers, 14,250 tons, 25,000 horsepower, 22 knots; the French Jeanne d'Arc, armored cruiser, 11,000 tons, 28,500 horse power, 23 knots; a protected armored cruiser for Italy of 10,500 tons, 13,000 horse power, 23 knots; the Buenos Ayres of Argentina, protected cruiser, 4,500 tons, 14,000 horse power, 23.2 knots; the Chilean Blanco Encalada, protected cruiser, 4,420 tons, 14,500 horse power, 22.78 knots; the Nueve de Julio, of Argentina, protected cruiser, 14,500 horse power, 22.74 knots; and the Yoshino of Japan, an improved form of the latter vessel, with a speed of 23.08 knots. It would seem that expert opinion favors extreme speed for large cruisers.—Wm Ledyard Cathcart in Cassier's Magazine.

600-Foot Lake Vessels.

The prediction that within ten years 600-foot vessels will be built on the lakes, is not probable, on account of the available depth of channel, but the Detroit Free Press prophecy is given for what it is worth. It says that it is thought that in the next ten years the present length of 440 feet will be exceeded by 150 or more feet. Experiments are being made with a central arch of steel running fore and aft, as it is in the length, not the width, that weakness is shown in a seaway. Then it is thought that girders will be so changed in position and composition as to give greater strength and that strakes will not only be made stronger but better fastened as the method improves with experiment. The limit as to depth is certainly reached now, though 55 feet and even a little greater may be attained in width. Therefore it would be necessary to introduce the arch and other means of strengthening. Not only the seas but the action of the engine gives the long hull the snake-like motion that is plainly perceptible if one stands at the after end and looks toward the bow. A steel arch, running amidships the length of the vessel, and well-braced, would so strengthen the modern steel vessel hull as to allow of the 550-foot length and greater, and at the same time not handicap the vessel with dead weight, giving it great draught when with light cargo.

An excellent chart of Green bay and approaches, on a large scale has just been published by the United States hydrographic office and may be had from the Marine Review. The chart is corrected to March 1, 1897, and takes in, with Green bay, the west shore of Lake Michigan from Manistique to Keweenaw. It will be of great value to masters of Lake Michigan trading vessels, as well as the men in charge of the larger ore and coal carriers trading to Escanaba. Soundings are in feet and there is a scale of statute miles attached. The price is \$1.25, but the chart is so complete in detail that it is larger than the single sheet charts of either Lake Superior or Lake Michigan.

Some Odd Insurances at Lloyd's.

There are two popular fallacies in connection with Lloyd's. The first, that Lloyd's, the greatest underwriting institution in the world, exists solely for the purpose of insuring maritime risks; the next, that a Lloyd's policy has the whole aggregate wealth of the institution at its back. Dealing with the last-named fallacy first, it will suffice to say here that the value of a policy is to be measured strictly by the separate solvency of the individuals whose names are attached to it. It is therefore humanly possible that a Lloyd's policy might possess no more value than that of a marine insurance company which had lost its funds and gone into liquidation; practically, no such case has ever occurred, or is ever likely to occur; and so it has come to pass that a Lloyd's policy is justly regarded as the highest form of security known. Individual underwriters occasionally fail; but such incidents are few and far between, and when they do occur, what with deposits and guarantees, and the small line taken on each risk, the insured rarely suffers. Only one further point in this connection requires to be noted; these deposits and guarantees apply only to marine risks, and are not available for the payment of losses on other classes of insurance though effected on a Lloyd's policy; proving that marine insurance only is still regarded as the legitimate business of Lloyd's; the extraneous business standing, so to speak, on its own bottom, and depending for its security on such means as the underwriter may happen to possess outside of his deposited funds or guarantee. It is from the consideration of these outside insurances, some of which are striking in their oddity, that amusement may be derived, and it is solely from this point of view that we propose to treat the subject.

An energetic broker is said to have once advertised that he could cover sixty contingencies at Lloyd's, other than those arising out of fire and marine risks (fire insurance being a comparatively modern innovation in the room). We have not seen a list of those sixty contingencies, neither do we understand why so narrow a limitation should have been placed on the business; for looking at the variety of risks covered to-day the real difficulty would seem to be to find a contingency that could not be provided for. Royal and possibly other weddings, for instance, entail risks which tradesmen and contractors are careful to cover. The wedding may not come off; death or other causes may prevent it; orders for trousseaux, decorations, illuminations, etc., may be given and accepted on the understanding that payment is conditional on the event going through. In such cases Lloyd's comes in as the universal guarantor. Not Lloyd's, exactly, but individual members of Lloyd's who are always open to do this outside business, and whose experience has taught them to measure the risks and adjust the premiums with fair accuracy. From marriage to its results is not a far step. A favorite insurance a Lloyd's is against a multiplicity of children at a birth, and a policy against twins is a matter of common occurrence. Years ago a famous underwriter, known popularly as "Dicky Thornton," was said to be always ready to lay a thousand to one against twins; though whether the transaction took the form of a policy for £1,000 at 2s. per cent., or whether it was simply entered as a bet, we are not at this distance of time able to say. Anyhow the practice still exists. The enterprising burglar, too, brings business to Lloyd's, or, to be more correct, causes business to be brought there. Insurances against burglary are increasing rapidly, notwithstanding many hard knocks received by the underwriters. But these gentlemen, like the late Mr. Sayers, have a way of "coming up smiling," and they learn in time to temper their premiums to the shorn householder. The danger in that class of business seems to lie in the temptation it offers to fraud, as demonstrated by more than one action at law. A shopkeeper burgles himself and sends in his claim, in the same way that a man sets fire to his house and makes a raid on his insurance office. On the other hand, neither underwriters nor offices accept every claim without proof, and in furnishing the proof the wrong-doer, as the law courts show, is apt to break down.

Animals, both ashore and afloat, are a common subject of insurance. The stately giraffe, the huge elephant, the horse, the ass and the ox all come in turn before the underwriter. In the case of the insurance of the only giraffe of which we have any knowledge a very high premium was demanded and paid chiefly because outside of the ordinary risks of transit the beast from his peculiar shape is bad to stow, and takes a lot of room aloft, where the temperature is always colder. Elephants are regularly insured, and there is an old story of a policy-clerk writing out an insurance on a "beast with a tail at both ends," his mind full of clauses, asking his principal "if these elephants

were packed in a tin-lined case, or whether they were packed in waterproof or pitch paper." We remember hearing of a risk being offered on a herd of working elephants in the east for twelve months. The insurance read "against all risks of mortality, natural or otherwise, on a herd of 126 working elephants for twelve months, now working in ———. Warranted no elephant more than sixty years of age. To pay a loss on receipt of company's certificate signed by three responsible agents of the company." Various underwriters quoted for the risk, but all the rates asked were too high—and "queered the pitch." Some of the best elephants of the herd were 100 years of age. Horses, where of exceptional value, are invariably insured. The risk of unpropitious weather at a race meeting is also the subject of insurance in respect of the gate money, and the contingency of the race being postponed is commonly covered. This is generally good business, as flat races are seldom postponed on account of severity of weather, whereas jumping and coursing meetings taking place in the winter are almost uninsurable. Horses are also insured at Lloyd's while travelling from place to place. Mares and foals are insured for the foaling risk, and a month after.

Gate-money at cricket and football matches is also insured at Lloyd's. These policies are mainly insurance against bad weather. Another very odd insurance placed recently was to cover all and every risk on a glass bed, as packed in twenty cases for the Sultan of ———, against the risk of its not arriving in safety, and being set up at ——— (under European superintendence). It was a most curious glass structure of fifteen separate couches (of more than average size) grouped round the central and raised bed of the reigning prince. The beds arrived, and were successfully set up. Policies for a vast aggregate amount have been effected in the Room in connection with the Jubilee since the commencement of the present year—some attaching to the Queen's life; others to the lives of members of the royal family; others to the route of the procession, or to the procession passing certain points; others in various ways to the date of the ceremony; and others to still different eventualities—every interest in any way affected being thus provided with insurance facilities. Even bonfire piles have been covered against premature ignition. Much of the grandeur of the coming display will be attributable to the enterprise of Lloyd's underwriters, for it is certain that so many speculators would not have launched out into heavy expenditure over the event unless the underwriters had consented to stand behind them.

We have given a few of the more striking departures from the generally understood business of Lloyd's, but it would be a mistake to suppose that such departures are of entirely modern origin. There have always been members open to entertain any conceivable risk. On the walls of the ante-chamber of the secretary of the institution there recently hung a framed policy, bearing date the 21st May, 1813, for £500, against Napoleon Bonaparte dying or being taken prisoner between 21st May and 20th June, 1813, both days inclusive. Guarantee business is largely done at Lloyd's. The voice of a prima donna has been insured. Jewellers' travellers, ladies' jewelry while on the continent, the life of a light-house, the risk of damage to a promenade pier, the contingency of death arising from an operation, the guarantee that certain bonds or shares shall continue to pay, say, 4 per cent. for certain number of years, are amongst the risks habitually covered at Lloyd's.—Fairplay, London.

Stocks of Grain at Lake Ports.

The following table, prepared from reports of the Chicago board of trade, shows the stocks of wheat and corn in store in regular elevators at the principal points of accumulation on the lakes, June 19, 1897:

	Wheat, bushels.	Corn, bushels.
Chicago	4,442,000	7,606,000
Duluth	1,848,000	10,000
Milwaukee	113,000	3,000
Detroit	25,000	42,000
Toledo	306,000	680,000
Buffalo	1,123,000	809,000
	7,857,000	9,150,000

As compared with a week ago, the above figures show, at the several points named, a decrease of 342,000 bushels of wheat and an increase of 806,000 bushels of corn.

Army and navy charts of the lakes are kept in stock by the Marine Review, Perry-Payne building, Cleveland.

Trade Notes.

The Cleveland City Forge & Iron Company, Cleveland, O., is now at work on four rudder frames for the battleships Kearsarge, Kentucky, Illinois and Alabama, the first three of which are now under construction by the Newport News Ship & Engine Building Company, Newport News, Va., while the fourth is being built by the Cramp Ship & Engine Building Company, of Philadelphia. All four rudder frames are made from double refined wrought iron and have an extreme height of 20 feet 9½ inches, with an extreme width of 19 feet 3 inches. The rudder stocks are 18 inches finished diameter, and each has a 5-inch hole bored axially through it. Owing to its intricate shape the rudder stock portion of the frame had to be forged solid throughout and machined out afterward. The stock forging weighed about 25 tons in the rough, exclusive of the bows, counterbalance and braces. These rudder frames are the heaviest and most intricate ever attempted in this country.

"Touching a Tubular Triumph" is the title of a neat little book published by Randolph & Clowes, Waterbury, Conn. An illustration of seamless cold-drawn copper tubes 24 inch diameter and 12 feet long is shown. The steam pipes in the North West and North Land were furnished by this concern and were the largest ever manufactured in this country up to that time. The list of sizes and particulars would prove valuable to engineers and naval architects.

The new steamer for the Old Dominion line, Princess Anne will have her boats fitted with Standard automatic releasing hooks by Jas. R. Raymond, 24 State St., New York. No passenger steamer should be without them. Their use insures the proper launching of life boats and that means the saving of many lives in case of accident.

A New York yacht captain writes as follows to the American Shipbuilder: "The tug Robert H. Rathbun arrived in Boston, May 29, with five barges in tow. Allowing for the length of the tug and barges, as well as the long stretch of hawsers connecting each barge, would make this tow fully one mile long. While it is not an uncommon thing to meet these long tows, I mention this one in particular because the Boston papers spoke of it as being bothersome to sailing craft meeting them in certain places. As I myself passed this tow in Vineyard Sound I wish to call your attention to the fact that navigation is made very hazardous by meeting these long tows, especially where navigation is intricate. Take, for instance, a vessel meeting a tow of this kind at Pollock Rip slue. This tow would reach from No. 2 buoy to the bell buoy, the most intricate part in the Vineyard Sound. Now, for the safety of life and property which might be imperilled in case of collision, I trust you will comment on this in your valuable paper until this avariciousness is stopped. Again, what makes it more dangerous in case of thick weather, there are no signals indicating how many barges are being towed, so you can readily see how hazardous navigation is." If the barges were equipped with towing machines built by the American Ship Windlass Co., Providence, R. I., they could shorten tow line in dangerous places, and also during a storm, thus preventing any of them from going ashore.

UNITED STATES ENGINEER OFFICE, Detroit, Mich., May 23, 1897. VESSEL OWNERS AND MASTERS are cautioned against passing at HIGH SPEED through the improved 20-FOOT CHANNEL IN LAKE ST. CLAIR, as such speed threatens the durability of the improvement and the safety of navigation. It is hoped that this caution may induce owners and masters to co-operate in so reducing speed through this channel that the promulgation of restrictive regulations may not become necessary.

By order of the SECRETARY OF WAR.
G. J. LYDECKER, Lt. Col., Corps of Eng'rs,
U. S. A. July 1

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In General.

The Great Eastern was the first ship to be fitted with steam steering gear. The steerer was put in under the supervision of J. Macfarlane Gray, of London.

Senator Quay introduced a Senate bill appropriating \$1,250,000 for a dry dock at the League island navy yard, of a size to receive the largest battleships at low water.

The report that the Japanese government has refused to grant a subsidy of \$3,240,000 to the Nippon Yusen Kaisha's steamship line between Yokohama and Seattle, Washington Territory, is misleading. The proposed subsidy is really for about \$1,700,000, and not \$3,240,000. It is still under consideration, and will probably be granted when parliament again sits.

The Secretary of the Navy has sent a statement to the Senate concerning the cost and quantity of all the armor plate which has been supplied to the government by the Carnegie and Bethlehem steel companies. The statement shows that the Carnegie Company has supplied 12,127 tons at prices ranging from \$515 to \$661 and that the Bethlehem Company has supplied 13,302 tons within the same range of prices.

On June 8 the New York State Canal Board approved plans for canal improvements, the estimated cost of which is \$2,873,852. Of this amount, \$1,683,555 is for work on the eastern division of the Erie canal, and \$1,190,397 for work of the middle division. The total amount of work under the \$9,000,000 appropriation, contracts for which are either awarded or to be awarded in the near future, is \$6,199,527. The plans just approved are for 22 contracts.

A catalogue that is probably the most elaborate publication of its kind ever issued in this country has just been sent out by the Gas Engine & Power Co. and Charles L. Seabury & Co. (consolidated), builders of pleasure craft of all kinds at Morris Heights on the Harlem, New York City. About fifty elegant illustrations of steam yachts of all types and sizes are contained in this catalogue, and a complete description accompanies each of them. There are illustrations and descriptions also of engines and boilers suited to yachts, and all of the best type known in marine engineering circles. A few of the several kinds of sailing yachts built at the Harlem works are also described and illustrated, but the naphtha yachts, which are a specialty with this concern, are left to a separate publication.

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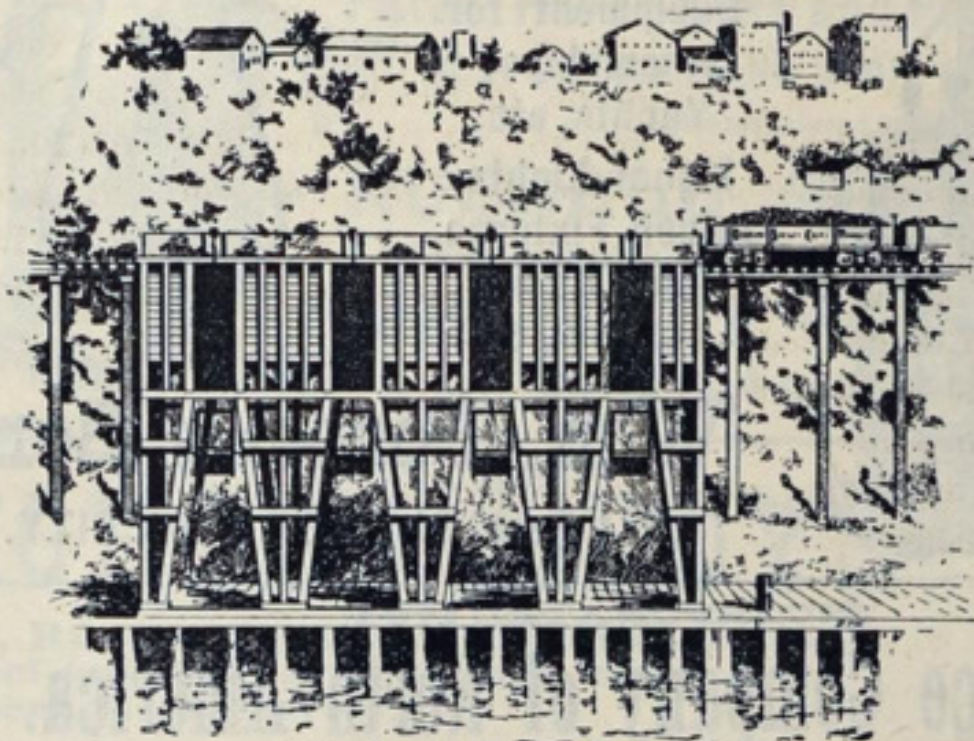
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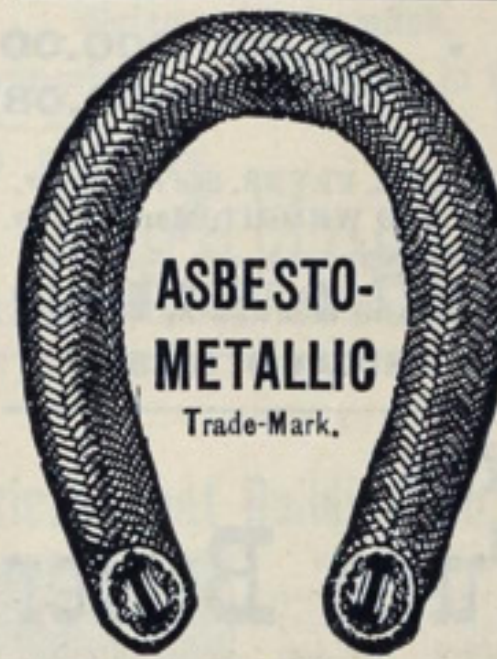

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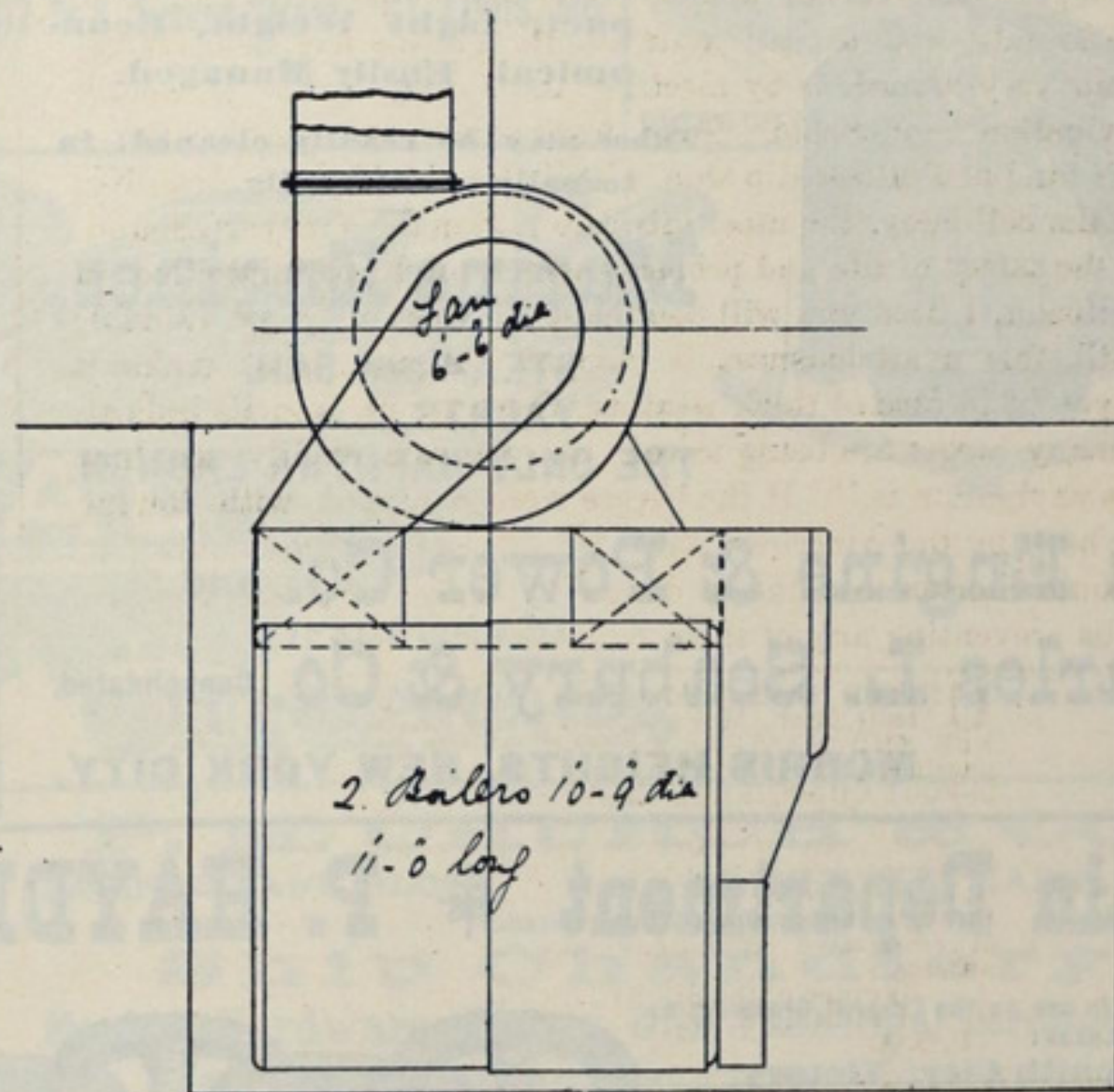
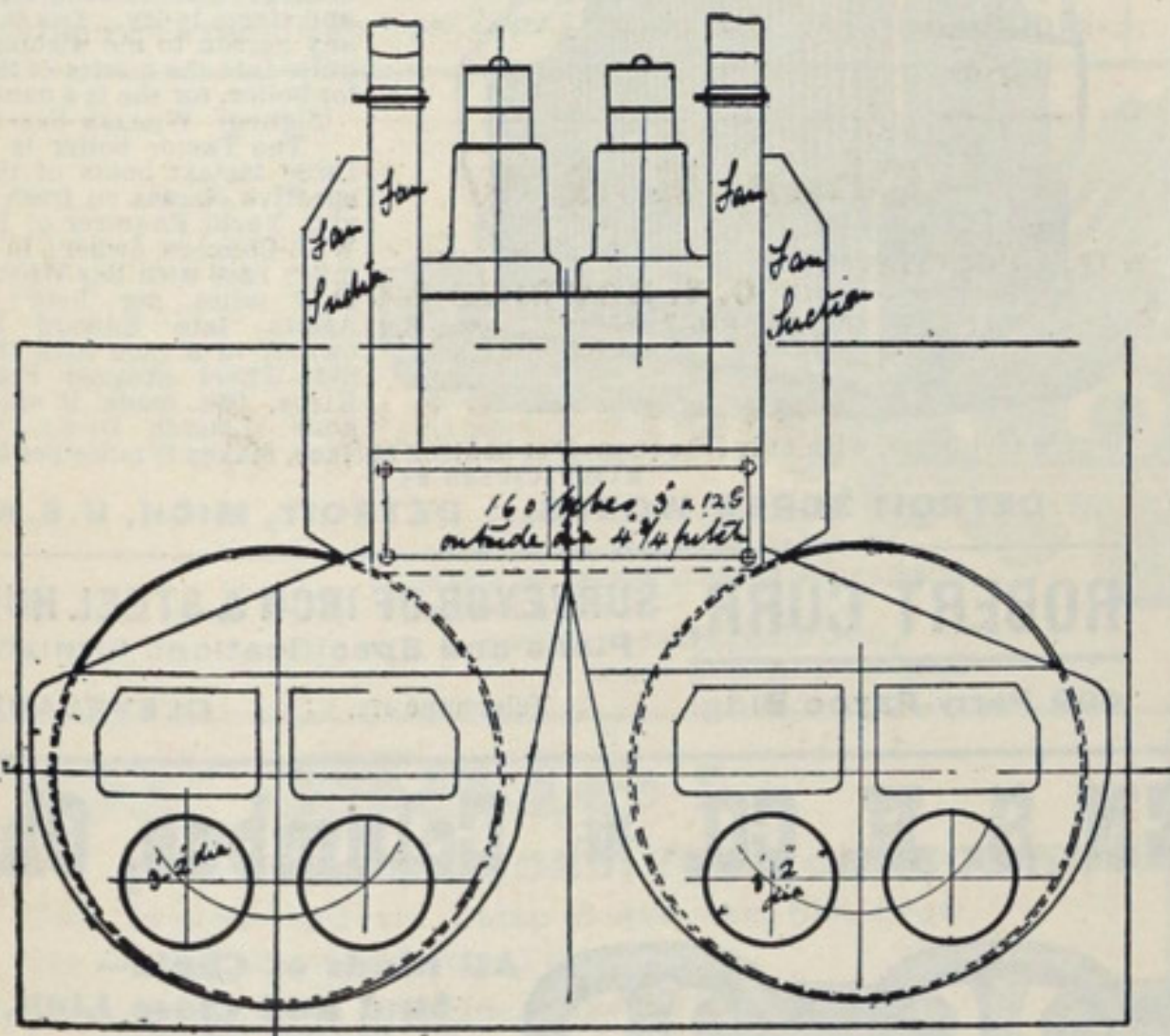
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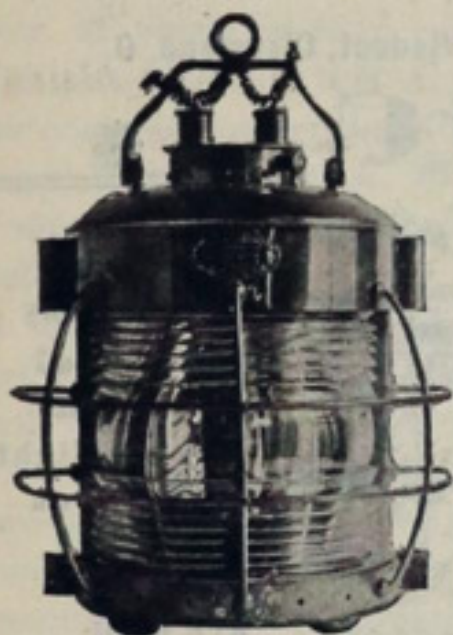
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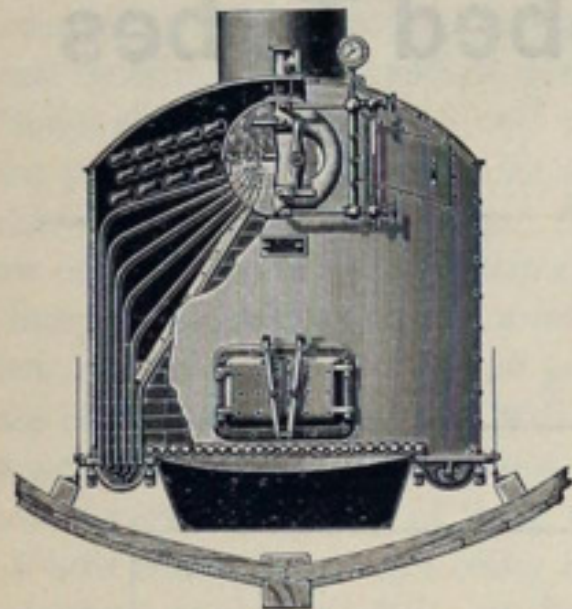
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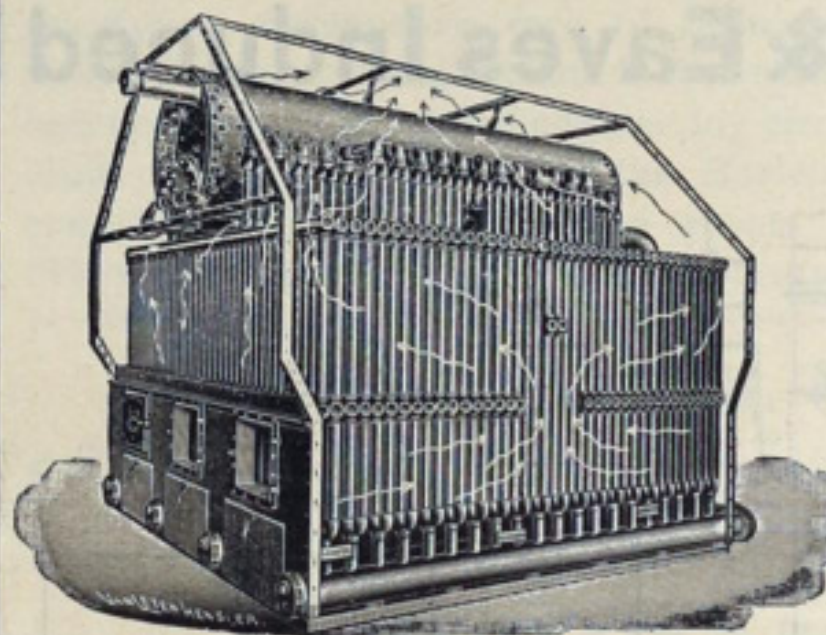
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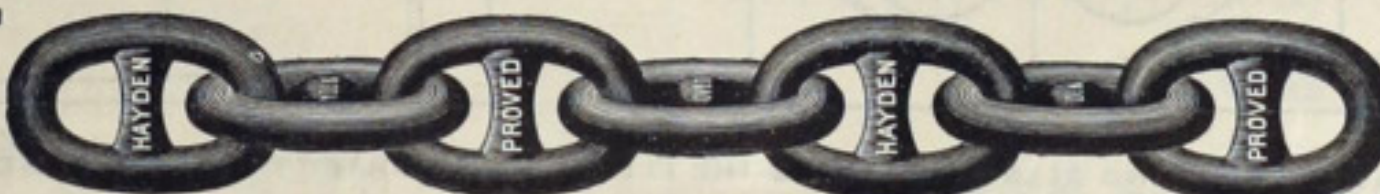
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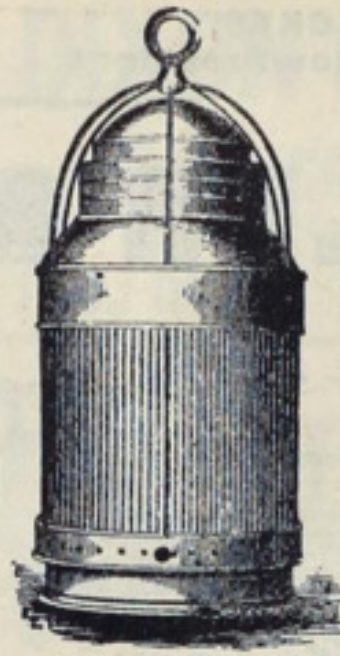
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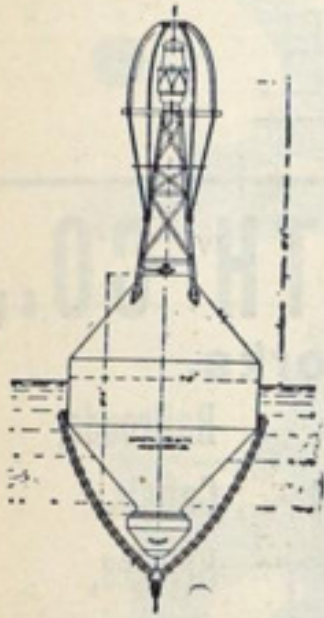
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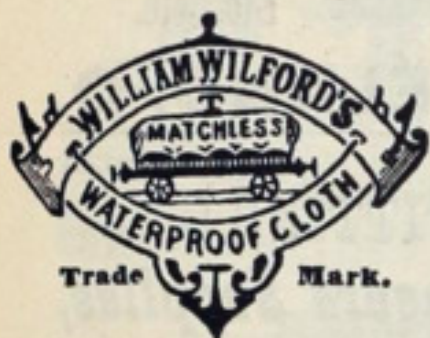
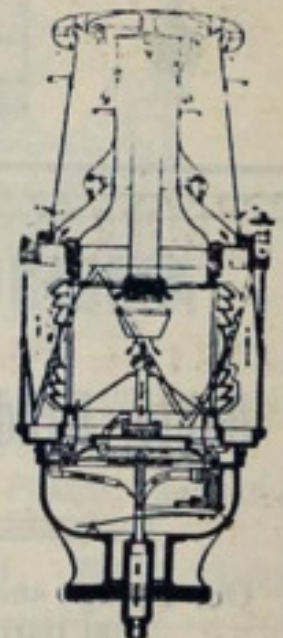
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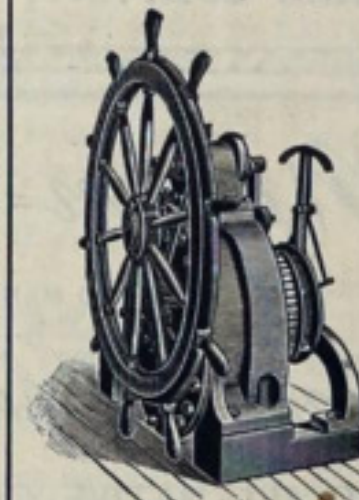


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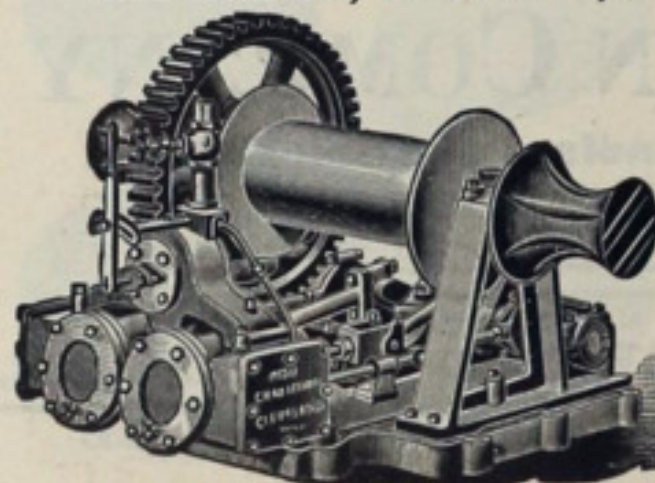
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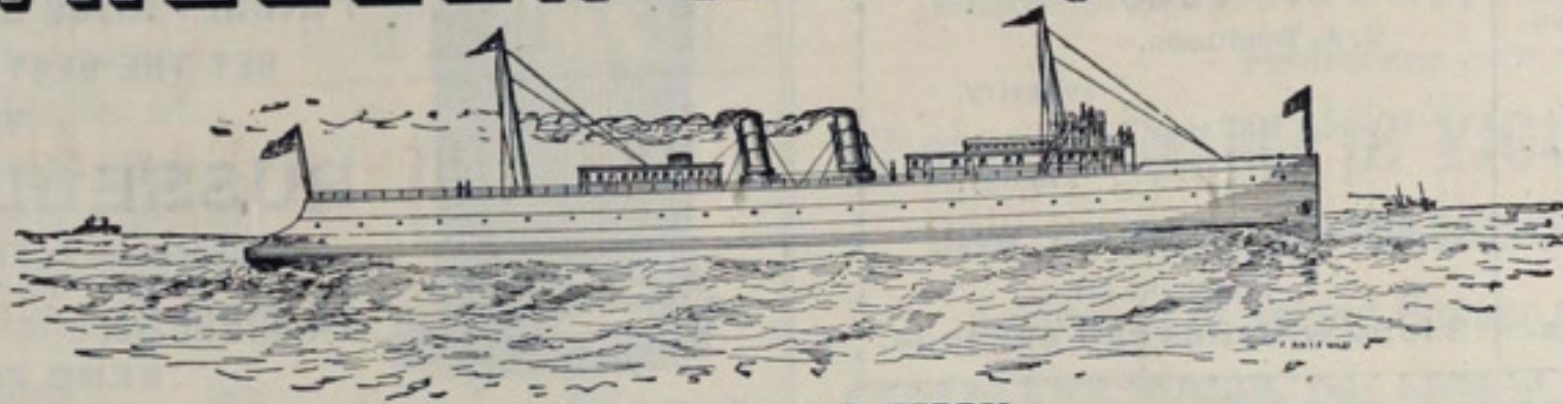
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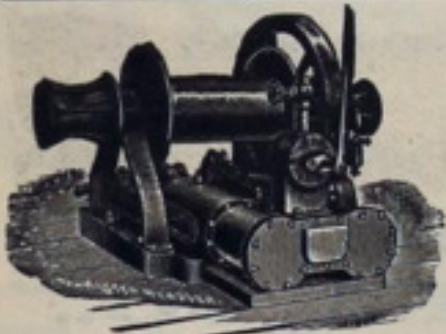
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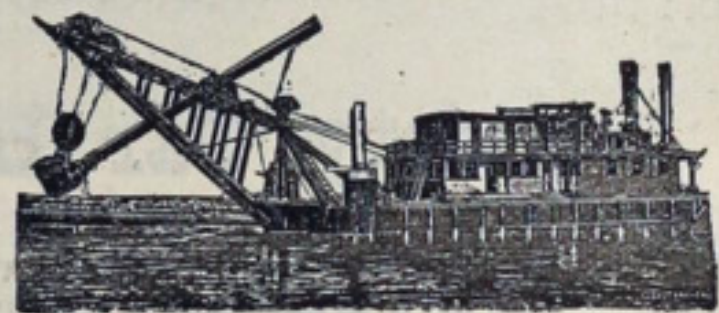
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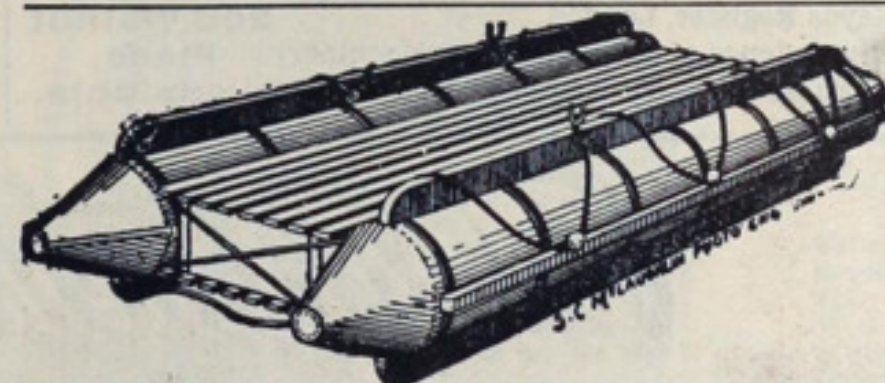
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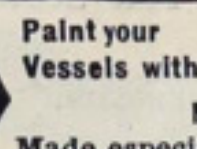
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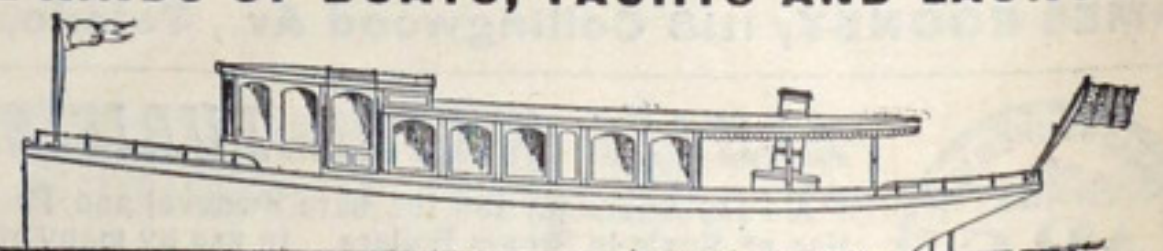
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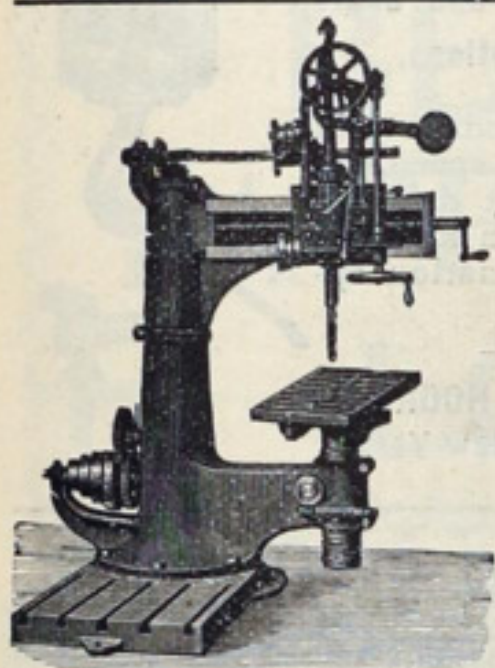
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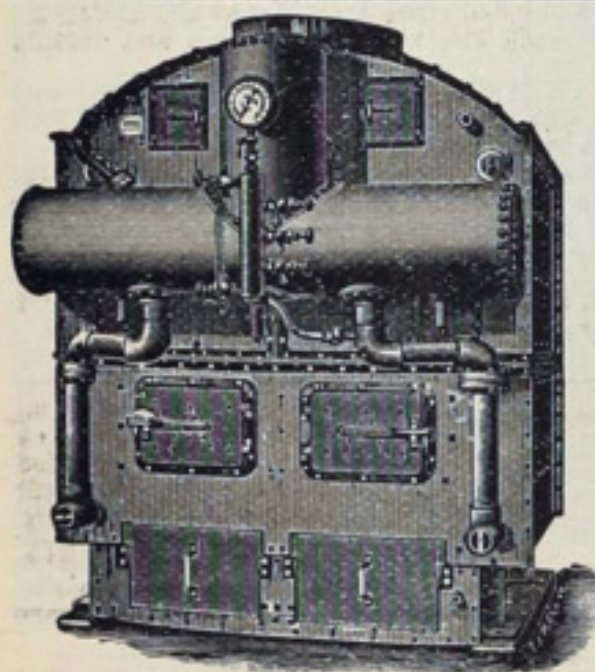
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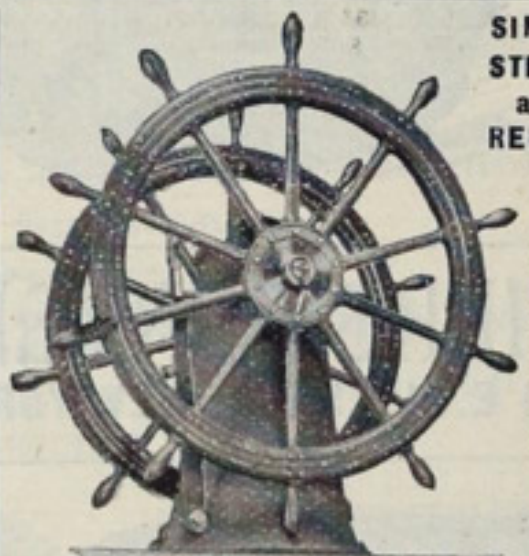
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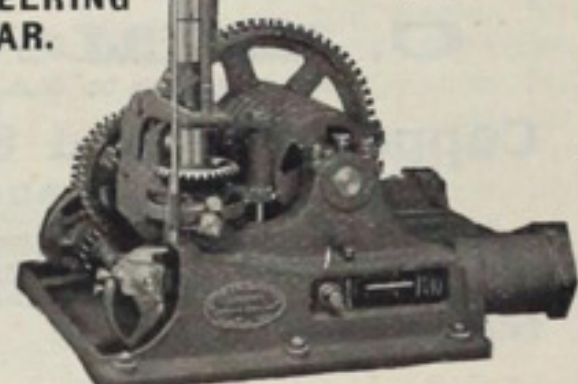


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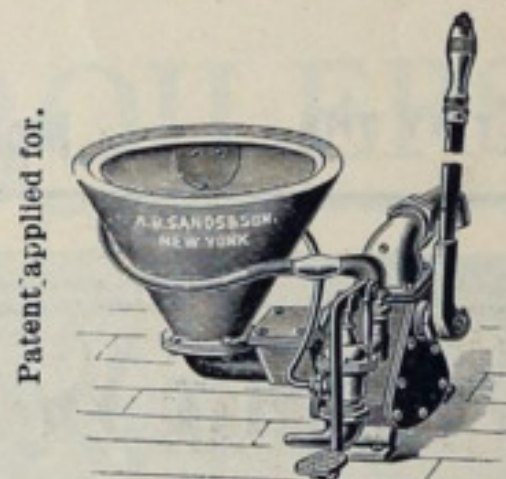
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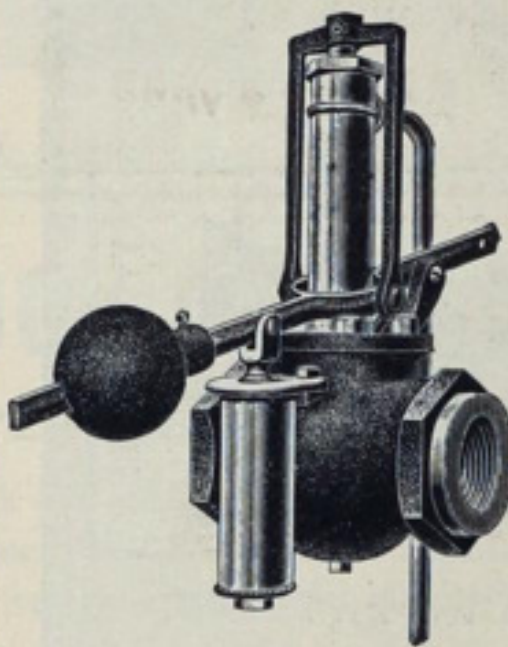


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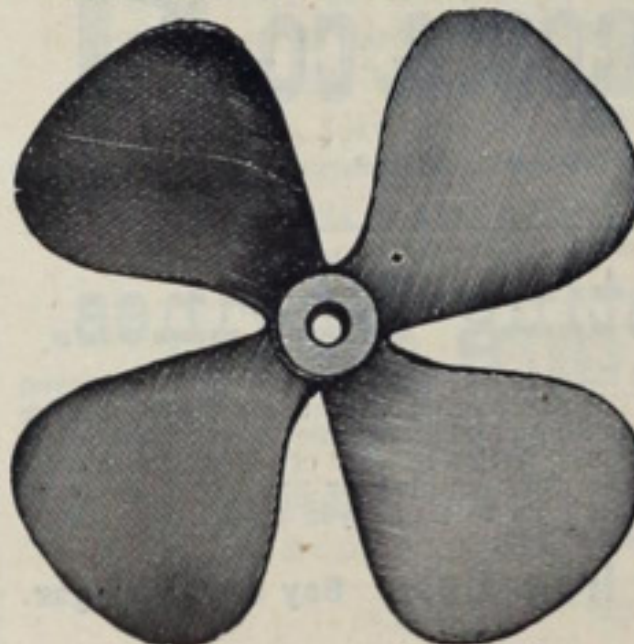
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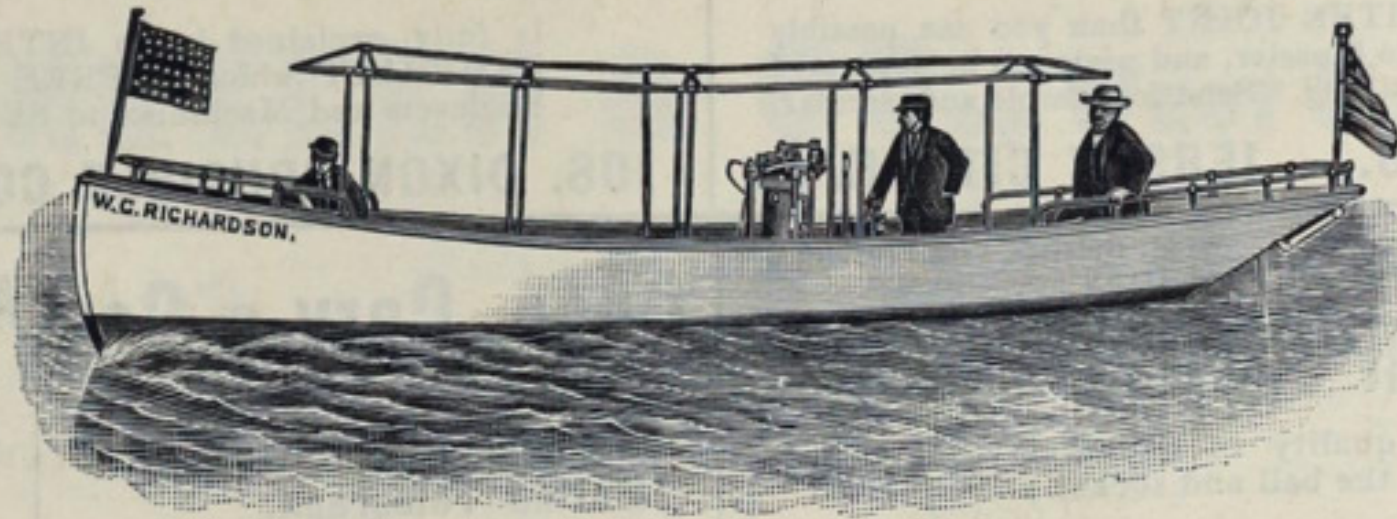


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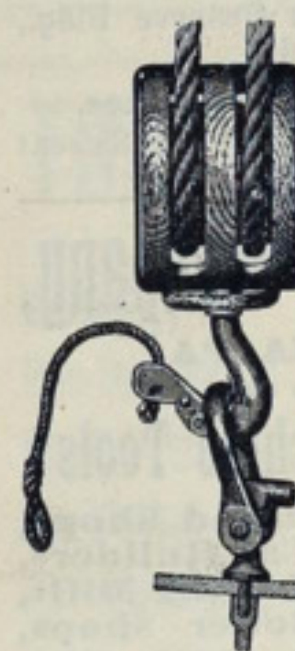
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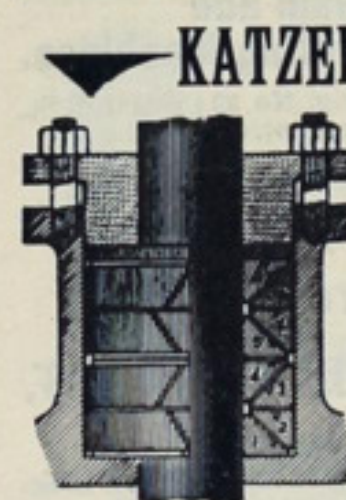


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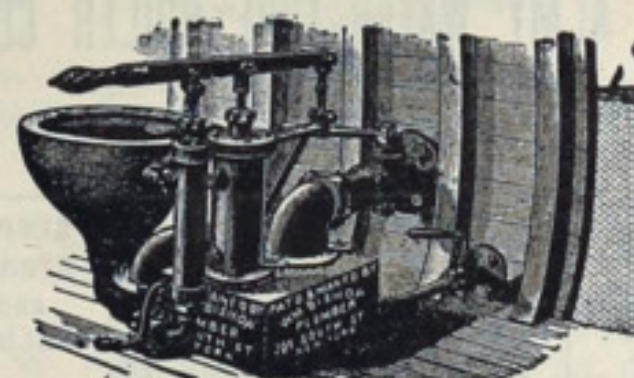
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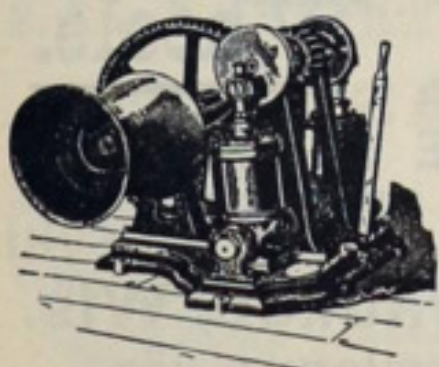
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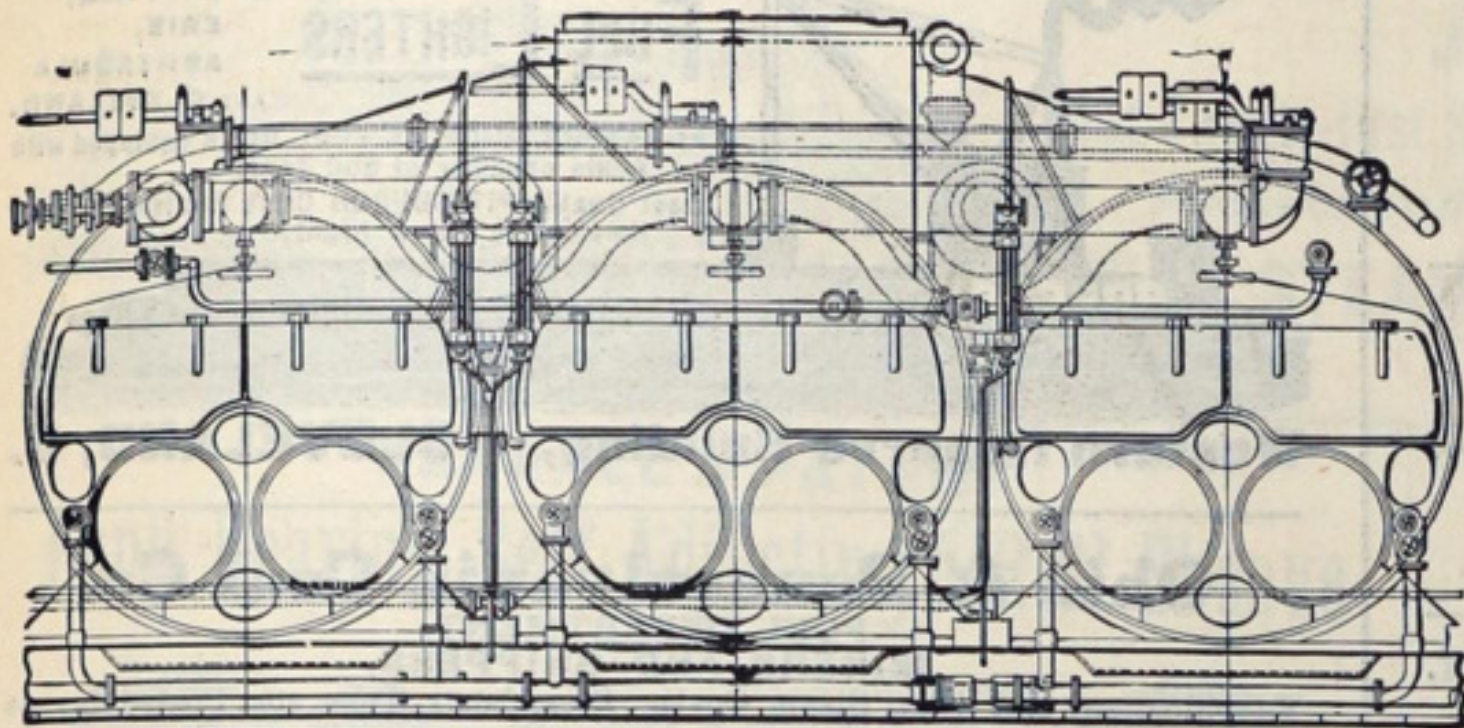


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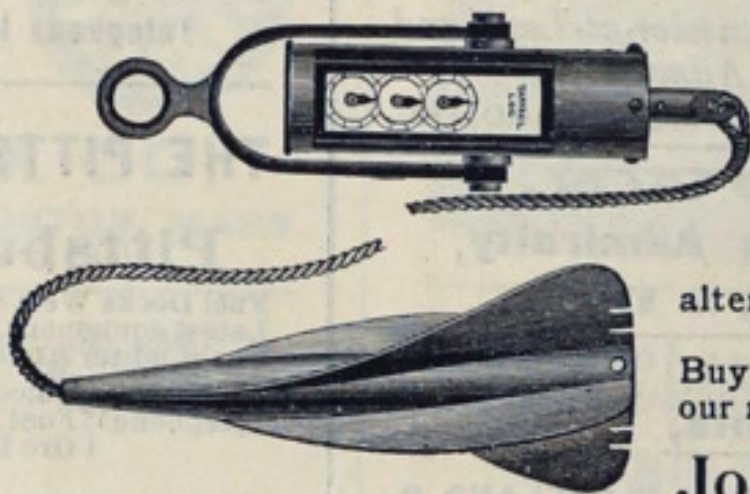


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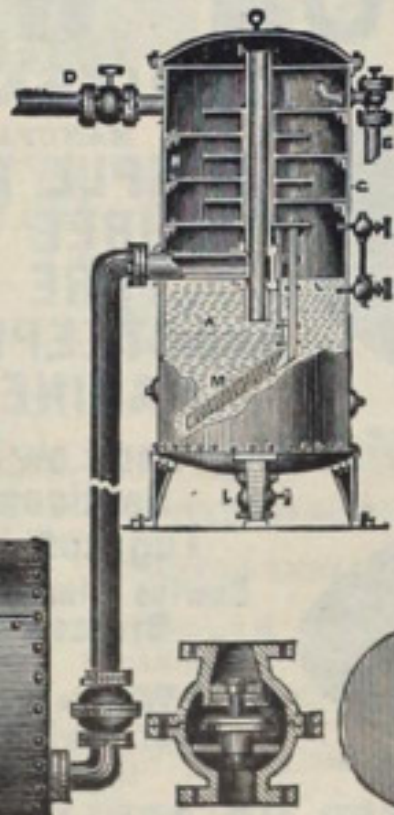
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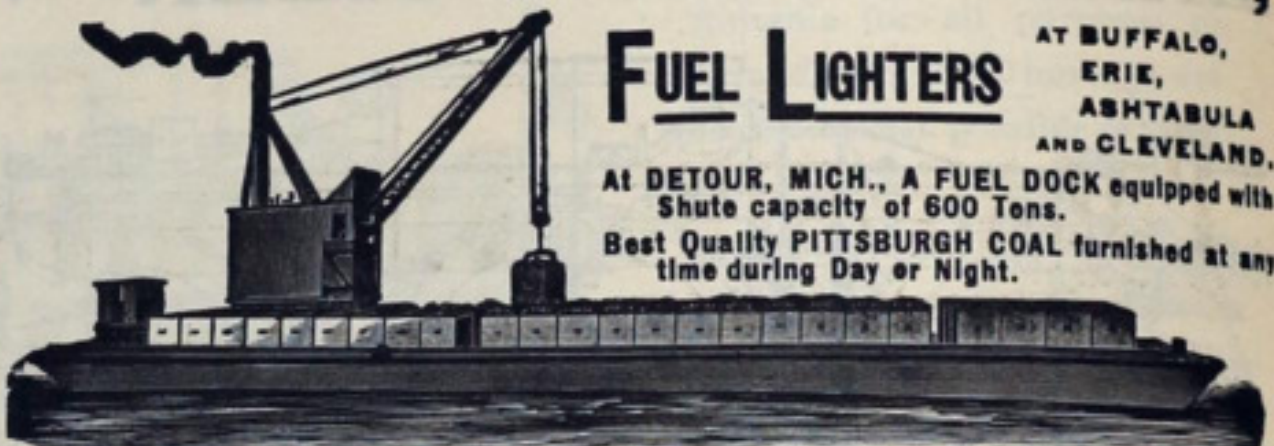
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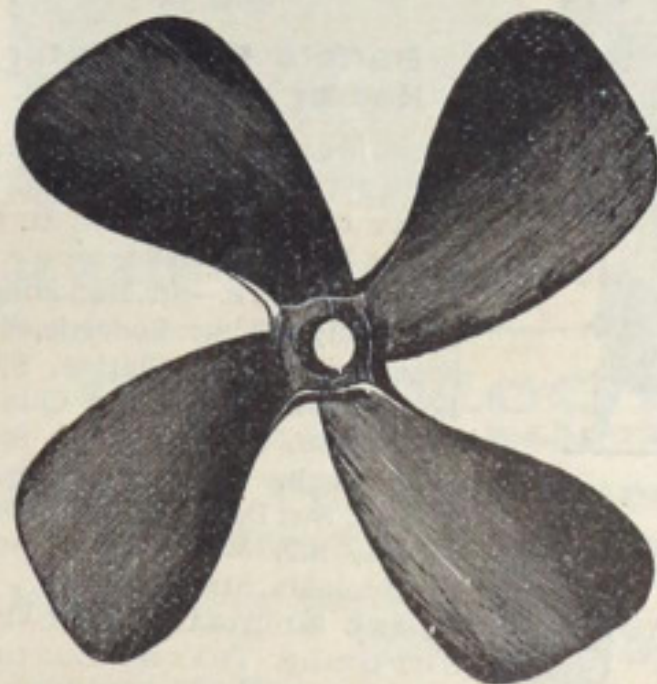
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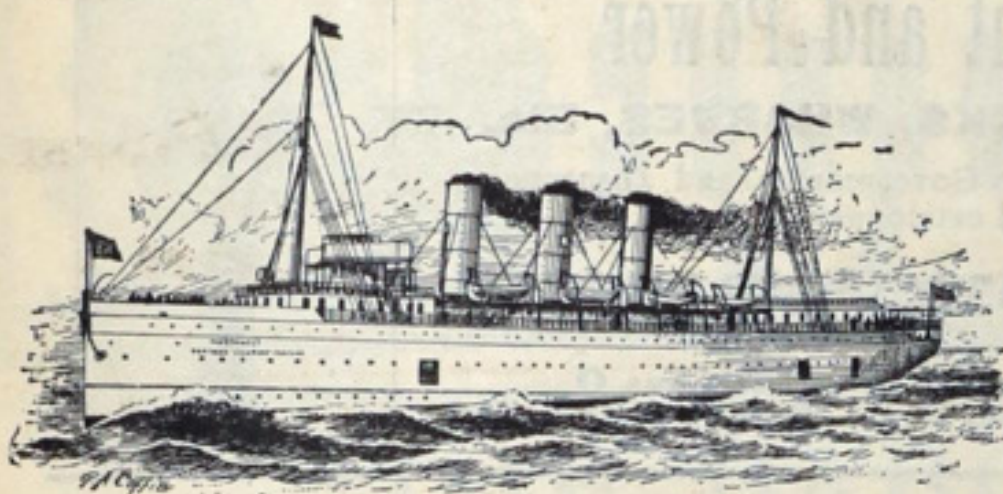
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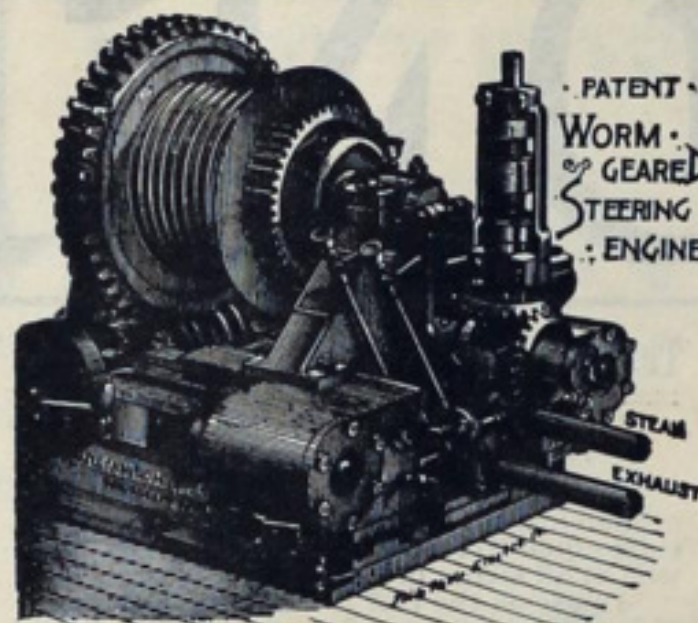
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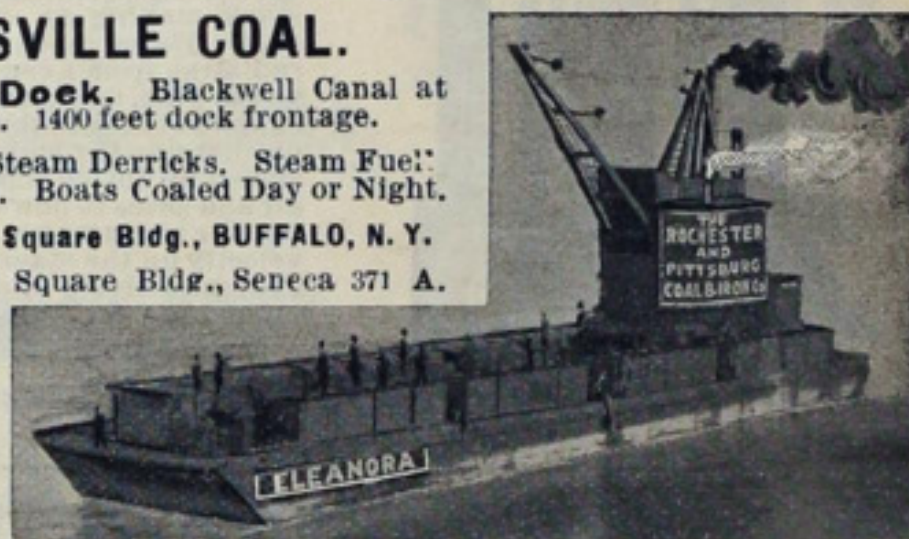
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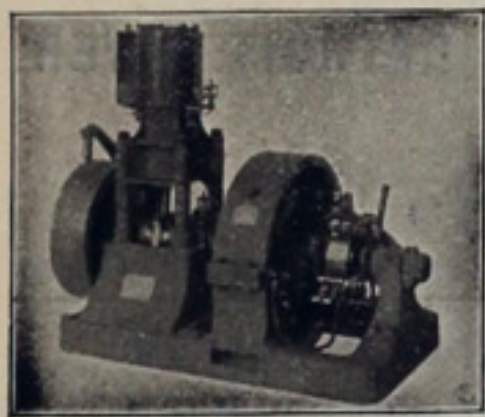
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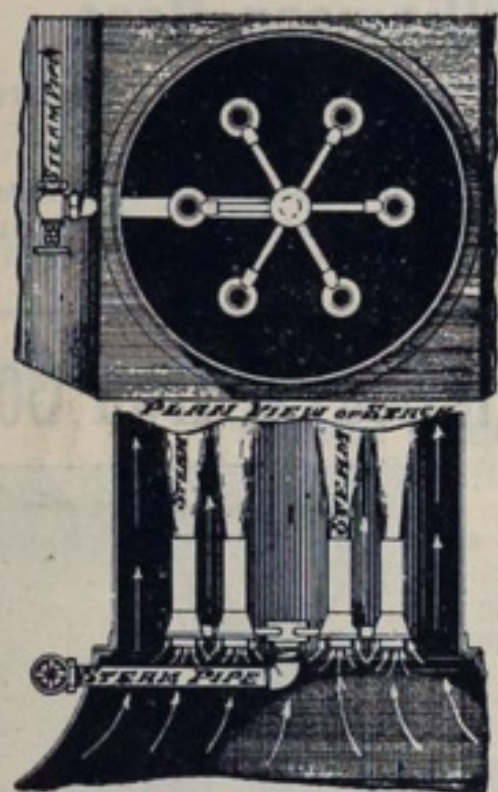
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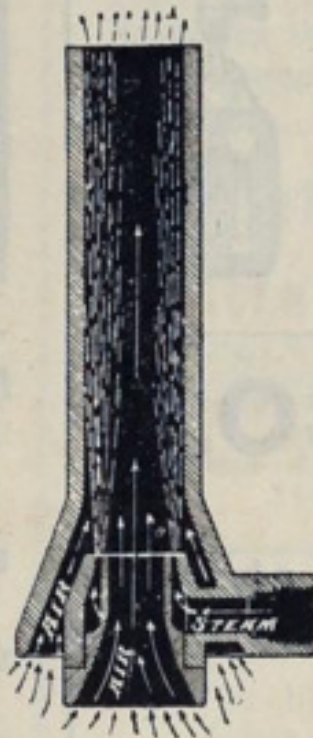
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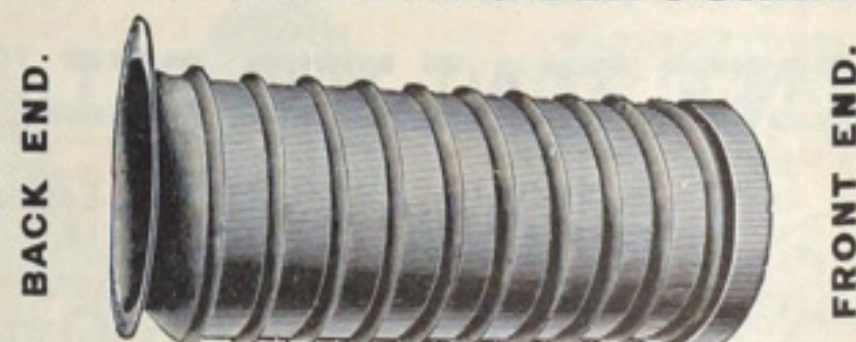
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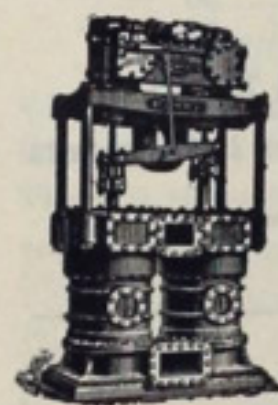
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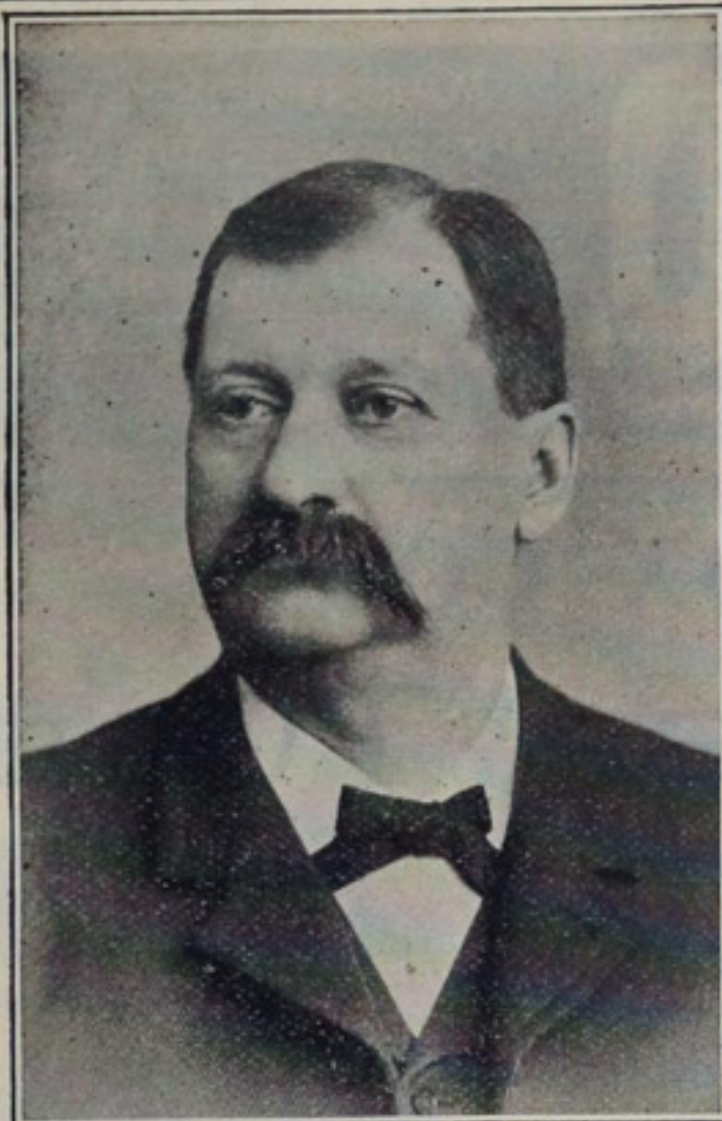
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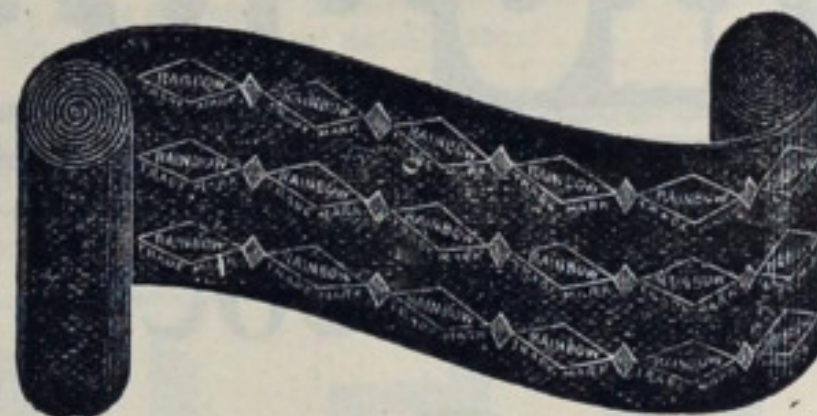


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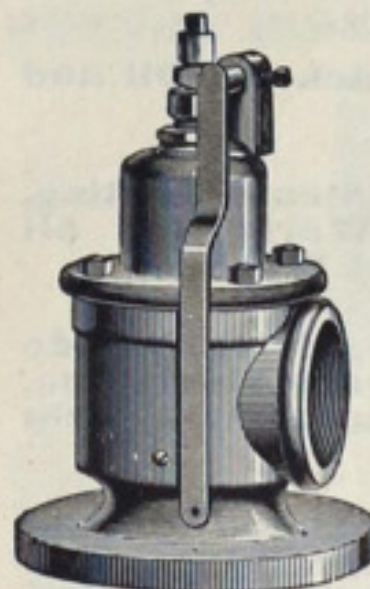
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